

Appendix 2 of EXHIBIT A

Settlement Agreement, Petition for Review of the State Certification, SWQB 20-78

Los Alamos National Laboratory – NPDES Permit No. NM0030759

December 6, 2021

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RECEIVED*Madai Corral*
By Madai Corral at 2:21 pm, Dec 13, 2021**Appendix 2 – Sites Proposed for Deletion**

SMA	Site Number	Site Description	Deletion Proposed By/Reason:	Impairments	Settlement Decision: Delete/Do Not Delete
R-SMA-0.5	C-00-020	AOC C-00-020 is a suspected mortar impact area located along the north valley wall of Rendija Canyon on GSA and USFS land.	Table 16 – LANL & EPA – not on DOE property (USFS)	Rendija Canyon – not assessed	Delete.
R-SMA-1	C-00-041	AOC C-00-041 is the site of a former asphalt batch plant located in a 50-ft by 600-ft portion of a side slope and ephemeral stream drainage channel that flows into Rendija Canyon on USFS land.	Table 16 – LANL & EPA	Rendija Canyon – not assessed	Do Not Delete. Permittees rescinded deletion request in comments on the draft permit.
R-SMA-2.05 (Deferred under HWB CO)	00-011(c)	SWMU 00-011(c) is the location of a possible munitions impact area. The Site is located on GSA and USFS land within a tributary of Rendija Canyon north of the Sportsmen’s Club small-arms firing range (AOC 00-015). The area is approximately 9 acres. The Site was identified as a possible munitions impact area because of nearly illegible historical signage posted at the Site in the 1940s.	Table 15 – LANL & EPA – no discharge	Rendija Canyon – not assessed	Delete. Site qualifies for no discharge.
R-SMA-2.3	00-011(e)	SWMU 00-011(e) is a former ammunition impact area located in a tributary of Rendija Canyon known as Thirty- Seven Millimeter Canyon on USFS land with a small portion on DOE land (LANL 2011, 208817). The site was used from 1944 to 1948 for training U.S. Army personnel operating tanks firing 20-, 37-, and 76-mm rounds and 50-mm caliber munitions.	Table 16 – LANL & EPA	Rendija Canyon – not assessed	Do Not Delete. Sampler wasn’t moved, samples were below TALs. Permittees rescinded deletion request on comments on the draft permit because the CoC issued by NMED requires monitoring under the IP. Additional information requested by CCW was provided in the Permittees comments on the draft permit.
R-SMA-2.5	00-011(a)	SWMU 00-011(a) is a 29-acre former mortar-impact area located on General Services Administration land about 0.4 mi east of the Sportsmen’s Club small-arms firing range (AOC 00-015) in Rendija Canyon. The Site was a mortar-impact area in the mid-1940s for 60- and 82-mm rounds; operations ceased in the late 1940s. SWMU 00-011(a) is located in a relatively flat open grassland with scattered shrubs and trees. The Site is bisected east to west by Rendija Road (unpaved). On the north side of the road, the Site has a gradual to steep slope to the ephemeral stream channel. The slope is covered by mulch consisting of downed trees that burned during the 2000 Cerro Grande fire. Although, the Site is fenced and posted with DOE	Permittees –NMED CoC and meets long term stewardship criteria – EPA; Alternative compliance request	Rendija Canyon – not assessed	Do Not Delete. Permittees will rescreen site using SSD process.

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		“No Trespassing” signs, evidence indicates the Site is used for recreational activities such as dirt-biking and target practice. During the 1993 Phase I RFI conducted at SWMU 00-011(a), the Site was surveyed for UXO and OEW; two live mortar rounds were found and destroyed. Other materials recovered during the ordnance sweep included approximately 2400 pieces of ordnance fragments and three times as much scrap material. Geomorphic mapping was conducted including mapping of all drainage channels that drained the area enclosed within the boundaries of the Site and the areas with high concentrations of ordnance fragments. Two pits containing tires and UXO/MD were excavated and removed. Consent Order investigations are complete for SWMU 00-011(a); the Site meets residential risk levels. NMED issued a COC with controls for SWMU 00-011(a) in May 2013. The controls require performance of triennial ordnance surveys, which were performed in 2013, 2016, and 2019.			
B-SMA-0.5	10-001(a) 10-001(b) 10-001(c) 10-001(d)	SWMUs 10-001(a–d) are the former asphalt shot pads that made up two firing sites located in the western third of former TA-10 in Bayo Canyon. The firing sites associated with SWMUs 10-001(a–d) each consisted of five structures: a battery building (power source), a fire control building, an electronics chamber, an X-unit chamber, and an inspection building (LANL 2008, 102793). The SWMU 10-001(a) shot pad was used in rotation with the SWMU 10-001(b–d) shot pads from 1943–1961 for experiments using HE in conjunction with nuclear weapons research (LANL 2005, 089658). Because of the residual radioactive material remaining at the site after a shot, the site could not be used again for approximately one month, so shots were rotated among the four sites (LASL 1947, 021563). Materials used in the shots included HE, natural uranium, uranium-238, strontium-90, lanthanum-140 (now decayed), lead, aluminum, steel, and possibly beryllium (LANL 1990, 007512). After a shot, residual material was moved to the SWMU 10-005 disposal pit located near the firing sites.	Table 16 – LANL & EPA – Not on DOE Property (LA County)	Bayo Canyon – not assessed	Do Not Delete.
	10-004(a)	SWMU 10-004(a) is a former septic system that received sanitary wastewater and other liquids from former building 10-21, a personnel building, from 1949 to 1963. The system consisted of a 550-gal. septic tank (former structure 10-40) that discharged to a pit measuring 8 ft x 8 ft x 12 ft deep (LANL 1990, 007512). The septic system handled primarily sanitary waste but may have potentially received laboratory waste, which could have contained strontium-90, barium, cadmium, platinum, benzene, carbon tetrachloride, acids, and organics (LANL 1990, 007512). An engineering drawing (ENG R-637, (LASL 1958, 023899) indicates the septic system also discharged to a drainline and outfall in a stream channel approximately 200 ft northeast of the former septic tank. The septic system was removed during the 1963 D&D activities.		Bayo Canyon – not assessed	
	10-004(b)	SWMU 10-004(b) is a former septic system that consisted of a reinforced concrete septic tank (former structure 10-38) measuring 4 ft x 10 ft x 4 ft deep (LANL 1990,		Bayo Canyon – not assessed	

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		007512). The system received sanitary waste from former building 10-01, a radiochemistry laboratory, and is suspected to have also received liquid waste from radiochemistry laboratory operations. Laboratory wastes could have contained strontium-90, barium, cadmium, platinum, benzene, carbon tetrachloride, acids, and organics (LANL 1990, 007512). An engineering drawing (ENG C-25683 LASL 1954, XXXXXX) indicates overflow from the tank drained through a 4-in., open-joint, VCP drainline to an outfall in the stream channel approximately 100 ft north-northeast of former septic tank 10-38			
	10-008	AOC 10-008 is a former satellite firing point located approximately 1,400 ft northwest of the former primary firing points associated with SWMUs 10-001(a-d). AOC 10-008 was not included in the 1990 SWMU Report but was discovered in 1994 during surface shrapnel characterization activities (LANL 1995, 046265). During a 1994 IA, shrapnel was found embedded in the northwestern sides of trees in this area (opposite the known primary firing points) (LANL 1997, 056660). After the site was discovered, archival interviews were conducted and a former employee indicated that some explosive tests were conducted outside the firing pad area using devices that did not contain radioactive diagnostic elements.		Bayo Canyon – not assessed	
	10-009	AOC 10-009 is a former landfill located in Bayo Canyon. AOC 10-009 was not included in the 1990 SWMU Report but was discovered in 1994 during routine surface shrapnel characterization activities in Bayo Canyon. A small depression was noted that contained materials, including asbestos siding, heavy-gauge and coaxial wire and cable, glass laboratory equipment, and other debris (LANL 1995, 046265). A geophysical survey conducted in the area showed additional anomalies (LANL 1996, 054491). The landfill area differed from the surrounding area; interviews conducted with former area workers confirmed the area had been used for disposal.		Bayo Canyon – not assessed	
B-SMA-1	00-011(d)	SWMU 00-011(d) is a former bazooka firing area located on predominantly Los Alamos County land and a small section of private property in a small north-trending tributary of Bayo Canyon. An investigation was conducted in 1992 to search for and remove UXO and OEW. OEW recovered from the site was found in the subsurface and was composed of approximately 0.5 yd ³ of tail-fin assemblies, motors, bullets, and other fragments from bazookas.	Table 16; Alternative compliance request	Bayo Canyon – not assessed	Do Not Delete. Permittees will rescreen using SSD process.
ACID-SMA-1.05	00-030(g)	SWMU 00-030(g) consists of a former septic system and outfall that were located near the former Catholic Church (3200 Canyon Road) in an area now covered by a paved parking lot. The septic system was installed in the early 1940s and received sanitary and industrial wastes from former TA-01 facilities. Waste from TA-01 facilities may have included isotopic plutonium, polonium, and uranium and mercury (LANL 1995, 051983).	Table 16 – LANL & EPA – Not on DOE Property (private entity)	Acid Canyon (Pueblo Canyon to headwaters): adjusted gross alpha, PCB, dissolved copper, total recoverable aluminum	Do Not Delete.
ACID-SMA-2	01-002(b)-0045-001	SWMU 01-002(b)-00 consists of a former industrial waste line outfall and its drainage into Acid Canyon. The outfall was located within the boundaries of former TA-45 at the head of a small branch of Acid Canyon known as the south fork of Acid Canyon.	Table 16 – LANL & EPA;	Acid Canyon (Pueblo Canyon to headwaters): adjusted gross alpha, PCB,	Do Not Delete because of SIP sampler move, need for soil data, and

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	45-002 45-004	<p>This outfall was used from 1943 to 1951 to discharge untreated RLW generated in laboratories and research facilities at former TA-01. Contaminants potentially present in the untreated wastewater include any chemicals or radionuclides used in buildings connected to the waste lines. These contaminants include plutonium, uranium, americium, thorium, tritium, cesium-137, strontium-90, metals, and solvents (LANL 1992, 043454). Discharges of untreated RLW ceased when the TA-45 RLW treatment plant began operation in 1951 (LANL 1990, 007511; LANL 1992, 43454; LANL 1992, 007668; LANL 1995, 048858). In 1966, the SWMU-01 002(b)-00 outlet pipe, associated weir box, tuff around the outfall, and tuff from the canyon wall below the outfall were removed (LANL 1981, 006059; LANL 1992, 007668). In September 1967, the TA-45 property was transferred to Los Alamos County (LANL 1992, 007668). A radiological survey of the remediated area conducted in 1981 concluded that residual contamination at the site was below allowable limits at that time (LANL 1981, 006509).</p> <p>SWMU 45-001 consists of the former TA-45 liquid waste treatment plant and its two associated outfalls. The TA-45 radioactive liquid waste treatment plant (building 45-2) was the first such facility at LANL and was located near the current intersection of Canyon Road and Central Avenue in the Los Alamos townsite (LANL 1992, 007668). The treatment plant began operation in 1951 and operated until 1964 (LANL 1990, 007513). The capacity of the plant was originally 90 gal./min but was expanded to 145 gal./min in 1957 (LANL 1992, 007668). The treatment plant included neutralization and storage tanks, flocculation tanks, sedimentation basins, vacuum filters, and granular media filters (LANL 1981, 006059). Contaminants potentially present in the untreated wastewater include any chemicals or radionuclides used in buildings connected to the waste lines. These contaminants include plutonium, uranium, americium, tritium, cesium-137, strontium-90, solvents, and other chemicals (LANL 1981, 006059; LANL 1990, 007513). Effluent from the plant discharged to Acid Canyon through two outfalls located near the canyon rim and flowed to the South Fork of Acid Canyon [SWMU 01 002(b)-00] (LANL 1990, 007513; LANL 1992, 007668). D&D of SWMU 45-001 began in October 1966 and included demolition and removal of the treatment plant equipment, facilities, and waste lines and excavation of contaminated soil (LANL 1981, 006059; LANL 1992, 007668). In July 1967, the TA-45 property was transferred to Los Alamos County (LANL 1992, 007668). NMED issued a CoC without controls for SWMU 45-001 in February 2013 (NMED 2013, 522072).</p> <p>SWMU 45-002 consists of a former vehicle decontamination facility used to remove radioactive contamination from vehicles and large equipment, including filters from the Sigma Building, trash dumpsters, wing tanks from airplanes, and lead bricks (LANL 1995, 048856). This former decontamination facility was composed of former building 45-1, a sump, and a drain system used to collect water for the RLW treatment facility (LANL 1990, 007513). SWMU 45-002 was located approximately 40</p>	Alternative compliance request	dissolved copper, total recoverable aluminum	TAL exceedances. Permittees rescinded deletion request in comments on draft permit. Additional information requested by CCW was provided in the Permittees comments on the draft permit. Permittees will rescreen using SSD process.

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		ft south of the TA-45 RLW treatment plant (SWMU 45-001). Vehicles and other equipment were decontaminated by steam cleaning (LANL 1995, 048856). Decontamination wastes consisted of oil and grease contaminated with radionuclides (LANL 1990, 007513). The decontamination facility was constructed in 1951, began operation in 1952, was operated approximately once per week until 1964, and was decommissioned in 1966 (LANL 1992, 007668; LANL 1995, 048856, IT Corporation 1991, 002085). Decontamination wastewater was initially discharged to Acid Canyon until 1955 when it was routed to the RLW treatment plant (LANL 1992, 007668). In July 1967, the TA-45 property was transferred to Los Alamos County (LANL 1992, 007668). NMED issued a CoC without controls for SWMU 45-002 in February 2013 (NMED 2013, 522072). SWMU 45-004 consists of a former sanitary sewer outfall. This outfall was associated with the sanitary sewer system that was constructed at TA-45 in 1947 to serve the Los Alamos townsite (LANL 1992, 007668). This sewer system included a sanitary sewer lift station (former structure 45-3) and sanitary sewer manholes (former structures 45-5 and 45-6) (LANL 1990, 007513). The outfall was located to the north of the lift station, approximately 100 ft north of the TA-45 treatment plant (SWMU 45-001) and was used for emergency discharge of overflow (LANL 1995, 048856). The outfall discharged into a drainage channel leading into Acid Canyon. The sanitary sewer manholes (structures 45-5 and 45-6) were plugged with concrete during the D&D of TA-45 in 1966 and 1967 and the sanitary sewer system was transferred to Los Alamos County in 1967 (LANL 1992, 007668). NMED issued a CoC without controls for SWMU 45-004 in February 2013 (NMED 2013, 522072).			
ACID-SMA-2.01	00-030(f)	AOC 00-030(f) consists of a former septic system that included two septic tanks located on private property south of Canyon Road and north of Rose Street, slightly northeast of the United Church school building. According to the OU 1071 RFI work plan, the tanks are labeled on a 1943 engineering drawing as "Septic Tank No. 2" (LANL 1992, 007667). The system was tied to sewer lines in the "Apartment Area" and handled sanitary waste from a school, a post exchange, and some of the original Ranch School buildings but did not handle waste from former TA-01 operations (LANL 1996, 054732). The septic system ceased operating when the central WWTP came online in 1947 (LANL 1992, 007667; LANL 1996, 054732).	Table 16 – LANL & EPA	Acid Canyon (Pueblo Canyon to headwaters): adjusted: gross alpha, PCBs, dissolved copper, total recoverable aluminum	Do Not Delete. Site is in extended baseline monitoring. No sampler move needed during SIP. Permittees rescinded deletion request in comments on draft permit.
ACID-SMA-2.1	01-002(b)-00	SWMU 01-002(b)-00 consists of a former industrial waste line outfall and its drainage into Acid Canyon. The outfall was located within the boundaries of former TA-45 at the head of a small branch of Acid Canyon known as the south fork of Acid Canyon. This outfall was used from 1943 to 1951 to discharge untreated RLW generated in laboratories and research facilities at former TA-01. Discharges of untreated RLW ceased when the TA-45 RLW treatment plant began operation in 1951. In 1966, the SWMU 01-002(b)-00 outlet pipe, associated weir box, tuff around the outfall, and tuff	Table 16 – LANL & EPA; Alternative compliance request	Acid Canyon (Pueblo Canyon to headwaters): adjusted gross alpha, PCBs, dissolved copper, total recoverable aluminum	Do Not Delete. This is a PCB site discharging to a PCB impaired receiving water. Need soil data. Permittees rescinded deletion request in

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		from the canyon wall below the outfall were removed. In September 1967, the TA-45 property was transferred to Los Alamos County.			comments on draft permit. Permittees will rescreen using SSD process.
P-SMA-0.3	00-018(b)	AOC 00-018(b) is the former Bayo Canyon WWTP that was located at the intersection of Pueblo and Bayo Canyons. It was owned and operated by Los Alamos County and began operating in 1963 and was upgraded in 1966 (LANL 1997, 056614). The plant treated the sanitary waste stream that previously was routed to the former central WWTP (SWMU 00-019) and sanitary waste from residences on Barranca Mesa (LANL 1997, 056614). The waste stream from SWMU 00-019 also included radioactive waste and laboratory chemicals (LANL 1991, 007511). Most wastes treated at the plant were from businesses, eastern Los Alamos residences, and Barranca Mesa residences (LANL 1997, 056614). After the Pueblo Canyon WWTP [SWMU 00-018(a)] was decommissioned in 1992, the remaining northern and western Los Alamos residential sanitary waste streams were routed to the Bayo Canyon WWTP (LANL 1997, 056614). Analysis of the wastewater showed low concentrations of beryllium, cadmium, mercury, lead, uranium, and plutonium isotopes. Cesium-137 and tritium were not detected (LANL 1992, 007667). This plant was the primary supplier of effluent for irrigation at the Los Alamos golf course and recreational ball fields from 1992 until it was decommissioned in 2007 (LANL 1997, 056614; LANL 2010, 109193). Mercury was historically used to seal and lubricate the hubs of trickling filters at the former WWTP (LANL 2010, 109193). The Bayo WWTP was demolished by Los Alamos County in 2009 and 2010 (LANL 2010, 109193). Residual mercury was found to be present in the trickling filter seals during demolition (LANL 2010, 109193).	Table 16 – LANL & EPA; Alternative compliance request	1. Pueblo Canyon (Acid Canyon to headwaters): PCBs, total recoverable aluminum, adjusted gross alpha, dissolved copper, 2. Pueblo Canyon (Los Alamos Canyon to Los Alamos WWTP): adjusted gross alpha, PCBs, total recoverable aluminum, total recoverable selenium, 3. Pueblo Canyon (Los Alamos WWTP to Acid Canyon): PCBs, adjusted gross alpha	Do Not Delete. Receiving water is impaired for gross alpha, copper. Permittees rescinded deletion request in comments on draft permit. Permittees state site will be rescreened using SSD process.
P-SMA-1	73-001(a) 73-004(d)	SWMU 73-001(a) is a former municipal landfill located at TA-73, north of the runway at the Los Alamos County Airport (LANL 1998, 063070). Use of the landfill began in 1943 when wastes were disposed of in a natural hanging valley on the south rim of Pueblo Canyon (LANL 1998, 063070; LANL 1992, 007667). As more capacity was required, trenches were excavated into the tuff (LANL 1998, 063070). A hot-mix asphalt batch plant operated in the vicinity of the landfill from the mid-1940s until 1954 (LANL 1992, 007667; LANL 1990, 007514). Los Alamos County operated the landfill from 1965 until it closed in 1973 (LANL 1998, 063070; Miller and Shaykin 1966, 036692; IT Corporation 1991, 000650). Waste disposed of in the SWMU 73-001(a) landfill consisted primarily of nonradioactive townsite and Laboratory trash and may include VOCs, SVOCs, metals, HE, PCBs, pesticides and uranium (LANL 1990, 007514). SWMU 73-004(d) is a former septic system that was located east of the present Los Alamos County Airport terminal building at TA-73. According to the work plan, the septic system was installed in the early 1970s, served the former landfill office, and was located approximately 20 ft northeast of the building (LANL 1992, 007667). A 4-	Table 16 – LANL & EPA	1. Pueblo Canyon (Acid Canyon to headwaters): PCBs, total recoverable aluminum, adjusted gross alpha, dissolved copper, 2. Pueblo Canyon (Los Alamos Canyon to Los Alamos WWTP): adjusted gross alpha, PCBs, total recoverable aluminum, total recoverable selenium, 3. Pueblo Canyon (Los Alamos WWTP to Acid Canyon): PCBs, adjusted gross alpha.	Do Not Delete. These are PCB sites discharging to PCB impaired waters. Permittees rescinded deletion request in comments on draft permit.

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		in.-diameter VCP connected the building's toilet to the septic tank (LANL 1992, 007667). According to the NFA report, the building and septic tank were removed as part of the decommissioning operation conducted in the early 1970s and it is not known whether the system included a leach field (LANL 1997, 059367).			
P-SMA-2	73-002 73-006	<p>SWMU 73-002 is a former incinerator and former associated ash pile located at TA-73, west of the Los Alamos Airport terminal and on the south rim of Pueblo Canyon. According to the work plan, the incinerator was housed in the two-story concrete building, 73-2, and a 6-ft-diameter stack was located on the north side of the building (LANL 1992, 007667). According to the IR, the incinerator was originally used to destroy classified LANL documents from 1947 to 1948, after which time the incinerator was used to burn municipal trash (LANL 2007, 098194). Ash and debris were deposited over the edge of the mesa, which resulted in an ash pile that was approximately 150 ft wide by 160 ft long and up to 8 ft deep (ITSI 2005, 092983). Incinerator operations ceased in 1973, and the incinerator equipment and stack were removed (LANL 1992, 007667). Constituents detected in the ash and debris included metals, PAHs, PCBs, pesticides, dioxins/furans, and radionuclides (LANL 2007, 098194).</p> <p>SWMU 73-006 consists of two former cast-iron drainlines that discharged to Pueblo Canyon from the former incinerator building (structure 73-2) (SWMU 73-002), that was located west of the Los Alamos Municipal Airport terminal building at TA-73 (W.C. Kruger 1947, 000657). The west drainline, constructed of 5-in.-diameter cast-iron pipe, originated from two floor drains, now plugged with concrete, one on the west side of the charging floor and the other on the west side of the stoking floor (LANL 1998, 062522). The east drainline, also constructed of 5-in.-diameter cast-iron pipe, originated at similar concrete-plugged drains located on the east side of the charging and stoking floors (LANL 1998, 062522). The drains reportedly handled wash water and are reported to have operated concurrently with the incinerator (LANL 1992, 007667). The drainlines discharged directly onto the former ash pile (SWMU 73-002) (LANL 1998, 062522). The floor drains were assumed to have been used from 1947 to 1973 when the incinerator was in operation (LANL 1992, 007667) and were described as having been plugged in a 1998 sampling plan (LANL 1998, 062522). The contents of the wash water are unknown but may have contained ash from the incinerator.</p>	Table 16 – LANL & EPA – Not on DOE Property (LA County)	<p>1. Pueblo Canyon (Acid Canyon to headwaters): PCBs, total recoverable aluminum, adjusted gross alpha, dissolved copper,</p> <p>2. Pueblo Canyon (Los Alamos Canyon to Los Alamos WWTP) adjusted gross alpha, PCBs, total recoverable aluminum, total recoverable selenium,</p> <p>3. Pueblo Canyon (Los Alamos WWTP to Acid Canyon): PCBs, adjusted gross alpha.</p>	Do Not Delete. An exceedance of gross alpha (130.5 pCi/L) occurred and this SMA, which discharges to a waterbody impaired for adjusted gross alpha.
P-SMA-2.2	00-019	<p>SWMU 00-019 is the former central WWTP, which was first installed to replace a series of septic tanks serving original LANL facilities and some residential areas of the Los Alamos townsite (LANL 2001, 071417). The plant was operated from the 1940s until 1964, when it was abandoned and decommissioned (LANL 1990, 007511).</p> <p>SWMU 00-019 includes the sites of former manholes, primary and final settling tanks, a pump house, underground piping at various depths, a sludge digestion tank and drying beds, a trickling filter, a clarifier, a chlorinating station, and two outfall</p>	Table 16 – LANL & EPA	<p>1. Pueblo Canyon (Acid Canyon to headwaters): PCBs, total recoverable aluminum, adjusted gross alpha, dissolved copper,</p> <p>2. Pueblo Canyon (Los Alamos Canyon to Los</p>	Do Not Delete. Permittees rescinded deletion request in comments on draft permit.

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		areas (LANL 2001, 071417). The outfalls discharged to Graduation Canyon (LANL 2001, 071417). The central WWTP received wastewater from residences and businesses located east of Diamond Drive and south of Canyon Road (LANL 1990, 007511). The plant generally received sanitary wastewater, but may have received radionuclides and laboratory chemicals (LANL 1990, 007511).		Alamos WWTP): adjusted gross alpha, PCBs, total recoverable aluminum, total recoverable selenium, 3. Pueblo Canyon (Los Alamos WWTP to Acid Canyon): PCBs, adjusted gross alpha.	
P-SMA-3.05	00-018(a)	SWMU 00-018(a) consists of the decommissioned Pueblo Canyon WWTP, located at the end of Olive Street in Pueblo Canyon on Los Alamos County property (LANL 1992, 007667; LANL 1997, 056614). The plant, which was built between 1946 and 1948, began operating in 1951 and received waste from HRL at TA-43 until 1983 (Francis 1991, 000642) and from Los Alamos business and residential customers until 1991 (LANL 1997, 056614). From 1983 to 1991, the plant received only sanitary waste from Los Alamos businesses and residences (LANL 1997, 056614). The plant was the primary supplier of irrigation for the Los Alamos golf course and recreational ball fields (LANL 1997, 056614). From 1953 to 1983, this WWTP received laboratory waste (less than 10 L/mo) from the HRL at TA-43, the only known laboratory contributor to the waste stream at the plant (LANL 1997, 056614). The HRL generated chemical and radioactive wastes, but LANL policy required that radioactive wastes not be discharged to the drains. Analysis of the wastewater showed low concentrations of beryllium, cadmium, mercury, lead, and uranium. Radionuclides were not detected (LANL 1992, 007667).	Table 16 – LANL & EPA; Alternative compliance request	1. Pueblo Canyon (Acid Canyon to headwaters) PCBs, total recoverable aluminum, adjusted gross alpha, dissolved copper, 2. Pueblo Canyon (Los Alamos Canyon to Los Alamos WWTP): adjusted gross alpha, PCBs, total recoverable aluminum, total recoverable selenium, 3. Pueblo Canyon (Los Alamos WWTP to Acid Canyon): PCBs, adjusted gross alpha.	Do Not Delete. PCB site that discharges to PCB and copper impaired waters. Permittees rescinded deletion request in comments on draft permit. Permittees will rescreen site using SSD process.
LA-SMA-3.1	01-001(e)	SWMU 01-001(e) is the location of former septic tank 139 (structure 01-139), its associated inlet and outlet drainlines, and outfall in former TA-01. The tank outfall discharged southeast of the buildings at the head of Bailey's Bridge Canyon. Septic tank 139 was constructed in 1944 of reinforced concrete and measured 3 ft by 36 ft by 5 ft deep (LANL 2001, 069946) and served the D-5 Sigma vault (former structure 01-011), I Building (former structure 01-032), and Delta Building (former structure 01-016) (LANL 1992, 043454; Ahlquist et al. 1977, 005710). The tank was decommissioned and left in place in 1965 (Ahlquist et al. 1977, 005710). However, the tank was not found during the 1974–1976 radiological sampling of TA-01 (Ahlquist et al. 1977, 005710). The D-5 Sigma vault was used to store plutonium-239 and uranium-235 (LANL 1992, 043454). Radiological soil sampling (1974–1976) near the former D-5 Sigma vault showed minimal radiologic contamination, and no additional soil was removed (LANL 1992, 043454; DOE 1988, 003309). I Building was used between 1947 and 1958 to store and machine beryllium (LANL 1992, 043454). Delta Building was used as a meeting place and as a laboratory in which fission-	Table 16 – LANL & EPA	1. Los Alamos Canyon (DP Canyon to upper LANL boundary): PCBs, total recoverable cyanide, total recoverable selenium, adjusted gross alpha, total mercury 2. Los Alamos Canyon (NM-4 to DP Canyon): adjusted gross alpha, PCBs, total recoverable aluminum, total recoverable cyanide, radium, total mercury	Do Not Delete. Permittees rescinded deletion request in comments on draft permit. Permittees will rescreen site using SSD process.

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		product tracers were used. Currently, the septic tank location is on private property under Oppenheimer Drive, residential buildings, and adjacent yards, driveways, and sidewalks (LANL 2006, 091916).			
LA-SMA-3.9	01-006(a)	SWMU 01-006(a) is the former drainline and outfall that served a cooling tower (former structure 01-080) at former TA-01. The drainline and outfall were located on the east side of the cooling tower and south of Building X (former structure 01-079) near the north rim of Los Alamos Canyon (LANL 2006, 091915; LANL 1992, 043454). Cooling Tower 80 was installed in 1944 and removed in 1954 (LANL 2001, 069946); the drainline was left in place. Biocides containing chromium may have been added to the cooling tower as was standard practice at the time (LANL 1992, 043454). Currently, the location of the former pipeline is under a building of the privately owned Los Arboles condominiums. Although no documentation was found on the removal of the drainline, it was likely removed during the construction of the residential building (LANL 2006, 091915).	Table 16 – LANL & EPA	1. Los Alamos Canyon (DP Canyon to upper LANL boundary): PCBs, total recoverable cyanide, total recoverable selenium, adjusted gross alpha, total mercury 2. Los Alamos Canyon (NM-4 to DP Canyon): adjusted gross alpha, PCBs, total recoverable aluminum, total recoverable cyanide, radium, total mercury	Do Not Delete. Possible cyanide site discharging to cyanide impaired waters. Permittees rescinded deletion request in comments on draft permit. Permittees will rescreen site using SSD process.
LA-SMA-4.1	01-006(b) 01-003(b)	<p>SWMU 01-006(b) consists of the TA-01 former D Building (01-006) drainline that exited the southwest side of the building and extended southwest and then south before the outfall discharged to Los Alamos Canyon (LANL 2006, 091915). Before its removal, D Building was used primarily to process plutonium. The types and quantities of liquids handled by the drainline are not known (LANL 2006, 091915). During the 1974–1976 excavation of the D Building area, all drainlines were removed along with the areas of elevated radioactivity (Ahlquist et al. 1977, 005710).</p> <p>Former AOC 01-003(b), which was split into AOCs 01-003(b1) and 01-003(b2) in a request for modification of the Los Alamos National Laboratory (LANL) Hazardous Waste Facility Permit (HWFP) approved by the New Mexico Environment Department (NMED) on November 9, 2016. The Laboratory proposed to split former AOC 01-003(b) into two newly designated sites because each component of the AOC is located on property owned by different entities. AOC 01-003(b2) is the primary portion of a suspected surface disposal area for construction debris reported to be below the north rim of Los Alamos Canyon, approximately 450 ft east of Bailey Bridge Canyon. Site visits conducted to locate the disposal area identified a few pieces of metal debris, but there was no evidence of a surface disposal area.</p> <p>Phase I and Phase II Consent Order investigations have been completed at this Site. In November 2016, NMED approved a modification to the Laboratory’s Hazardous Waste Facility Permit to remove SWMU 01-003(b) and replace it with two new SWMUs, designated as 01-003(b1) and 01-003(b2), to expedite completion of corrective actions at the former Los Alamos Inn property. SWMU 01-003(b1) is that</p>	Table 16 – LANL & EPA	1. Los Alamos Canyon (DP Canyon to upper LANL boundary): PCBs, total recoverable cyanide, total recoverable selenium, adjusted gross alpha, total mercury 2. Los Alamos Canyon (NM-4 to DP Canyon): adjusted gross alpha, PCBs, total recoverable aluminum, total recoverable cyanide, radium, total mercury	01-006(b) – Do Not Delete. Permittees rescinded deletion request for 01-006(b) in comments on draft permit. 01-003(b) – Delete. SWMU 01-003(b) no longer exists and has been replaced with SWMUs 01-003(b1) and 01-003(b2), both of which will remain on the permit, the permittees rescinded deletion request for 01-003(b1) in comments on the draft permit.

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		portion of former SWMU 01-003(b) on the former Los Alamos Inn property, and SWMU 01-003(b2) is that portion former SWMU 01-003(b) on DOE and other private property. SWMU 01-003(b1) is being addressed as part of the investigation of the former Los Alamos Inn property and SWMU 01-003(b2) was addressed as part of the Phase II investigation for Upper Los Alamos Canyon Aggregate Area. AOC 01-003(b2) is recommended for a CoC without controls in the Phase II investigation report for Upper Los Alamos Canyon Aggregate Area Consent Order investigations are complete for SWMU 01-003(b1). NMED issued a CoC without controls in July 2017.			
LA-SMA-4.2	01-006(c) 01-006(d)	<p>SWMU 01-006(c) consists of possibly four drainlines and two outfalls that served former building D-2 (structure 01-008) (LANL 2017, 602404). Building D-2 was the laundry facility for radioactively contaminated clothing and recyclable equipment for all of TA-01 from 1943 to 1945 (LANL 1992, 043454). The laundry facility was moved to TA-21 in 1945 (LANL 1992, 043454). During the 1974–1976 radiological survey of former TA-01, contaminated soil was excavated in the areas of former buildings D and D-2 (Ahlquist et al. 1977, 005710). The SWMU 01-006(c) drainlines exited the southwest side of the building and discharged directly onto Hillside 137 (LANL 1992, 043454). Two drainlines and outfall at the southeast end of the former building were indicated on engineering drawings but were not located when trenching was conducted in the building D-2 area (Ahlquist et al. 1977, 005710). Two drainlines at the southwest end of the building were encountered during the excavation activities and were removed (Ahlquist et al. 1977, 005710). Currently the site has been covered with clean fill and is undeveloped (LANL 2017, 602404).</p> <p>SWMU 01-006(d) is the former drainline and outfall that served Building D-3 (former structure 01-009) and discharged to Los Alamos Canyon at the former TA-01. The outfall is located on Hillside 137 in the same area as the former SWMU 01-006(c) drainline (LANL 1992, 043454). Activities conducted at Building D-3 included counting radioactive filter papers from Building H-1 (Ahlquist et al. 1977, 005710). During the D&D of Buildings D and D-2, all drainlines were removed along with areas of elevated radioactivity (Ahlquist et al. 1977, 005710). Because the main portion of the drainline from Building D-3 was located in close proximity to Building D-2, this drainline was likely removed during the excavation of contaminated soils beneath and around Buildings D and D-2 (LANL 2006, 091915). Clean soil was used to backfill the excavations. Currently, the area is undeveloped and privately owned (LANL 2006, 091915).</p>	Table 16 – LANL & EPA	<p>1. Los Alamos Canyon (DP Canyon to upper LANL boundary): PCBs, total recoverable cyanide, total recoverable selenium, adjusted gross alpha, total mercury</p> <p>2. Los Alamos Canyon (NM-4 to DP Canyon): adjusted gross alpha, PCBs, total recoverable aluminum, total recoverable cyanide, radium, total mercury</p>	<p>Do Not Delete.</p> <p>No baseline monitoring. Permittees should evaluate whether measures used on other sites (i.e., BMPs to direct flow to the sampler) would be appropriate in this case. Permittees rescinded deletion request in comments on draft permit. Additional information requested by CCW was provided in the Permittees comments on the draft permit.</p>
LA-SMA-5.01	01-001(d) 01-006(h)	<p>SWMU 01-001(d) was split into SWMUs 01-001(d1), 01-001(d2), and 01-001(d3) in a request for modification of LANL’s HWFP approved by NMED on November 9, 2016. LANL proposed to split SWMU 01-001(d) into three newly designated SWMUs because each component of the SWMU is located on property owned by different entities.</p> <p>SWMU 01-001(d) is the location of former septic tank 138 (structure 01-138), its</p>	01-001(d): LANL & EPA - administrative changes from the 2010 permit, 01-001(d) split into 01-001(d1) and 01-	1. Los Alamos Canyon (DP Canyon to upper LANL boundary): PCBs, total recoverable cyanide, total recoverable selenium, adjusted gross	01-001(d)- Delete and replace with 01-001(d1), 01-001(d2), and 01-001(d3). The permittees rescinded their deletion request for 01-001(d1)

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		<p>associated inlet and outlet drainlines, and outfall in former TA-01. The septic tank was constructed of cylindrical metal, measured 4 ft in diameter and 4 ft deep (Ahlquist et al. 1977, 005710), and was located southeast of Building Y (former structure 01-081) (Engineering drawing ENG-R85, LASL 1958, 023446). The septic tank was installed in 1943 (LANL 2001, 069946) and served Buildings K (former structure 01 040), V (former structure 01 070), and Y (LANL 1992, 043454). Building K was a chemical stock room that contained a mercury still. Building V housed the original TA 01 uranium and beryllium machine shop (LANL 1992, 043454). Dry-grinding of boron was also performed in Building V. Building Y housed a physics laboratory that handled tritium, uranium-238, and polonium-210 (LANL 1992, 043454). In addition, a cooling tower (former structure 01-082) was associated with building Y and was removed in June 1956. Because no drainline or outfall was directly associated with the former cooling tower, blowdown could have been discharged to septic tank 138 through an existing drainline (LANL 2017, 602404). The buildings were connected to septic tank 138 by a sanitary waste line. The outfall was located east of Building Y and discharged over the rim of Los Alamos Canyon (Engineering drawing ENG-R85, LASL 1958, 023446). This outfall area is known as Hillside 138.</p> <p>The septic tank was abandoned in place in 1956, and the tank and surrounding soil were removed in 1975 (Ahlquist et al. 1977, 005710; LANL 2001, 069946). No radiological contamination was found in the septic tank, broken pipe shards from the inlet line, or in the outlet line; therefore, the section of the inlet line located beneath an office building was left in place. Samples collected from Hillside 138 indicated elevated levels of plutonium-239 and cesium-137; however, the hillside was not decontaminated during the survey because it was inaccessible. The area was fenced to prevent public access from the mesa top (Ahlquist et al. 1977, 005710). Currently, the location of the former sanitary waste line and former septic tank is on privately owned and commercially developed land with an asphalt parking lot. Part of the former line was under commercial buildings but is now accessible following removal of the buildings (LANL 2017, 602404). The outfall is located on undeveloped land owned by DOE. SWMU 01-001(d) overlaps the footprint of SWMU 01 006(h); the two sites share the same hillside area (LANL 2010, 110860).</p> <p>SWMU 01-006(h) was split into SWMUs 01-006(h1), 01-006(h2), and 01-006(h3) in a request for modification of LANL's HWFP approved by NMED on November 9, 2016. LANL proposed to split former SWMU 01-006(h) into three newly designated SWMUs because each component of the SWMU is located on property owned by different entities.</p> <p>SWMU 01-006(h) consists of the former storm water drainage system that served the northwest side of Building R (former structure 01-050) and the east side of Building Y (former structure 01-081) within former TA-01. Building R housed model, glass, carpentry, and plumbing shops (LANL 1992, 043454; Ahlquist et al. 1977, 005710).</p>	<p>001(d2)</p> <p>01-006(h): LANL & EPA - administrative changes from 2010 permit, 01-006(h) split into 01-006(h1), 01-006(h2), and 01-006(h3)</p>	<p>alpha, total mercury. 2..Los Alamos Canyon (NM-4 to DP Canyon): adjusted gross alpha, PCBs, total recoverable aluminum, total recoverable cyanide, radium, total mercury</p>	<p>and 01-001(d2) in comments on the draft permit.</p> <p>01-006(h)- Delete and replace with 01-006(h1), 01-006(h2), and 01-006(h3). The permittees rescinded their deletion request for 01-006(h1), 01-006(h2), and 01-006(h3) in comments on the draft permit.</p>

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		Building Y housed a physics laboratory that handled tritium, uranium-238, and polonium-210. The outfall for this drainage system was located 25 ft south of Building Y on the north rim of Los Alamos Canyon, immediately west of Hillside 138 (LANL 1992, 043454; Ahlquist et al. 1977, 005710). The Ahlquist radiological survey found no radioactive contamination in the water drainage areas (Ahlquist et al. 1977, 005710). The storm drains were removed after all the Laboratory buildings were demolished and the ground recontoured (LANL 2010, 108789). The location of the former storm water drainage system is on privately owned and commercially developed land. The SWMU was under commercial buildings but is now accessible following building demolition and removal (LANL 2017, 602404).			
LA-SMA-5.361	32-002 32-002(b1)	SWMU 32-002(b1) is part of a former septic system that served former buildings 32-1 and 32-2. SWMU 32-002(b1) is the portion of the former septic system that is located on property currently owned by the Los Alamos School Board. The remainder of the septic system is located on property owned by DOE and is designated as SWMU 32-002(b2). Former SWMU 32-002(b) was split into two new SWMUs [32-002(b1) and 32-002(b2)] in December 2012 to expedite completion of corrective actions on the portion of the Site owned by the Los Alamos School Board. The septic system was installed directly northwest and slightly upgradient of the SWMU 32-002(a) septic tank, near the edge of Los Alamos Canyon. This system was installed when the SWMU 32-002(a) septic system could no longer meet the usage requirement of the Laboratory (building 32-1) and consisted of a reinforced concrete tank (former structure 32-8) with an outlet drainline that discharged to an outfall at the edge of Los Alamos Canyon. The influent line from the SWMU 32-002(a) septic system was diverted to the former SWMU 32-002(b) septic system, which also received effluent from former building 32-2, the medical research annex. The outfall was located at the edge of Los Alamos Canyon, approximately 15 ft southwest of the SWMU 32-002(a) outfall. The septic tank was removed in 1988, and the influent drainline was removed in 1996. Research activities in former building 32-1 involved radionuclides and potentially inorganic and organic chemicals. Because no industrial waste line served former TA-32, it is possible chemical and radioactive wastes may have been disposed of in sinks and drains connected to the SWMU 32-002(b1) septic system.	32-002: EPA – administrative changes from 2010 permit 32-002(b1): Permittees – Not on DOE property (LA School Board) and meets long term stewardship criteria.	1. Los Alamos Canyon (DP boundary): PCBs, total recoverable cyanide, total recoverable selenium, adjusted gross alpha, total mercury 2. Los Alamos Canyon (NM-4 to DP Canyon): adjusted gross alpha, PCBs, total recoverable aluminum, total recoverable cyanide, radium, total mercury	32-002- Delete, this is an administrative error. 32-002(b1)- Do Not Delete. This may be a PCB site discharging to PCB-impaired receiving waters.
LA-SMA-5.51	02-011(b), 02-011(c)	AOC 02-011(b) consists of two drains, drainlines, and associated outfalls associated with former stack-gas valve house (structure 02-19, [AOC 02-003(a)]) at TA-02. One drainline was a 9-ft-long × 15-in.-diameter CMP between former building 02-19 and a former catch basin (former structure 02-35). The second drain was a 9-ft-long × 24-in.-diameter CMP that drained from the catch basin (structure 02-35) to Los Alamos Creek outside the east fence around the former facility. The drains, drainlines, and associated outfalls were presumably installed in 1944 when structure 02-19 was constructed. The stack-gas valve house operated through 1974 when it was	Permittees – significant industrial materials were not used or managed at the Site.	1. Los Alamos Canyon (DP boundary): PCBs, total recoverable cyanide, total recoverable selenium, adjusted gross alpha, total mercury 2. Los Alamos Canyon	Do Not Delete. These may be PCB, gross alpha and mercury sites discharging to PCB, gross alpha and mercury impaired receiving waters.

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		deactivated; the structure was removed in 1985 during D&D activities. The actual purpose of the drainlines and catch basin is not documented; however, there is no information to indicate these drains and drainlines handled anything but storm water. The drainlines and catch basin were removed in 2003. AOC 02-011(c) is a former storm drain at TA-02 associated with the OWR equipment building [former building 02-44, AOC 02-004(f)]. The OWR equipment building operated from 1954 to 1993. The drainline was a 4-in.-diameter VCP that was approximately 12 ft long and drained to the surface west of the former western fence around the facility. The AOC 02-011(c) storm drain collected and discharged storm water from the vicinity of the building from 1954 to 2003. The drainline, which was installed in 1954, was removed and disposed of in 2003.		(NM-4 to DP Canyon): adjusted gross alpha, PCBs, total recoverable aluminum, total recoverable cyanide, radium, total mercury	
LA-SMA-5.91	21-009 21-023(c) 21-027(d)	AOC 21-009 is a former waste treatment laboratory (building 21-033) that was built in August 1948 and operated until 1965. It was a wooden-frame single floor structure, built on concrete pillars and measuring 16 ft x 48 ft with a 12-ft ceiling (LANL 1991, 007680; LANL undated, 070428). The building was used to conduct research into recovering plutonium from waste streams (LANL 1991, 007528). Building components and laboratory furniture were contaminated with plutonium dust. Perchloric acid was used and may have contaminated the exhaust hoods (Romero 1965, 000370). Wastewater from the laboratory was discharged to septic tank 21-062 [SWMU 21-023(c)], which discharged to an outfall at the rim of Los Alamos Canyon (LANL 1991, 007680). The building was decontaminated and decommissioned in 1965 (LANL 1991, 007680; LANL undated, 070428). The building was cut into two sections and removed to MDA G where it was burned and disposed of in Pit 4 (Romero 1965, 000370). The concrete foundation was bulldozed from its original site into Los Alamos Canyon (LANL 1991, 007680). The tank was removed during demolition of building 21-033 in 1965 (LANL 1991, 007680). SWMU 21-023(c) is a former septic system and associated outfall located immediately west of former MDA V (Engineering Drawing A5-C142, LASL 1948, 085559). The septic system consisted of a reinforced concrete tank (structure 21-062) that measured 3.5 ft wide x 7 ft long x 5.8 ft deep and a 4-in. VCP drainline (Engineering Drawing A5-C141, LASL 1948, 085559; LANL 1991, 007529). The septic system was intended only for sanitary waste and served a waste treatment laboratory (building 21-033) from 1948 to 1965 (LANL 1991, 007529). Sewage was pumped from the sump in building 21-033 through the septic tank and was discharged approximately 40 ft from the canyon edge above BV Canyon, a tributary to Los Alamos Canyon (Engineering Drawings ENG-R-1191 and ENG-R-1193, LASL 1956, 085559). Contaminants associated with building 21-033 include plutonium and perchlorate (LANL 1991, 007680; Romero 1963, 000369; Romero 1965, 000370). It is not known what volume of wastewater was handled by the septic system or if any releases occurred, other than intentional releases to the outfall. The septic tank was removed in 1965 and	Table 16 – LANL & EPA – 21-009 and 21-023(c); Not on DOE Property (LA County), CoC from NMED HWB, and meet long term stewardship criteria. 21-027(d); Not on DOE Property and meets Long Term Stewardship	1. Los Alamos Canyon (DP Canyon to upper LANL boundary): PCBs, total recoverable cyanide, total recoverable selenium, adjusted gross alpha, total mercury. 2. Los Alamos Canyon (NM-4 to DP Canyon): adjusted gross alpha, PCBs, total recoverable aluminum, total recoverable cyanide, radium, total mercury	Do Not Delete because exceedance for gross alpha (most recent sample result was 51 pCi/L, TAL for gross alpha is 15 pCi/L) in stormwater discharges to an adjusted gross alpha impaired water.

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		<p>taken to MDA G (LANL undated, 070428). The 2005–2006 field activities confirmed that none of the septic system components remained in place (LANL 2007, 098942). During the 2005–2006 field activities, radioactively contaminated soil in the outfall channel was removed (LANL 2007, 098942). SWMU 21-023(c) is a former septic system and associated outfall located immediately west of former MDA V (Engineering Drawing A5-C142, LASL 1948, 085559). The septic system consisted of a reinforced concrete tank (structure 21-062) that measured 3.5 ft wide x 7 ft long x 5.8 ft deep and a 4-in. VCP drainline (Engineering Drawing A5-C141, LASL 1948, 085559; LANL 1991, 007529). The septic system was intended only for sanitary waste and served a waste treatment laboratory (building 21-033) from 1948 to 1965 (LANL 1991, 007529). Sewage was pumped from the sump in building 21-033 through the septic tank and was discharged approximately 40 ft from the canyon edge above BV Canyon, a tributary to Los Alamos Canyon (Engineering Drawings ENG-R-1191 and ENG-R-1193, LASL 1956, 085559). Contaminants associated with building 21-033 include plutonium and perchlorate (LANL 1991, 007680; Romero 1963, 000369; Romero 1965, 000370). It is not known what volume of wastewater was handled by the septic system or if any releases occurred, other than intentional releases to the outfall. The septic tank was removed in 1965 and taken to MDA G (LANL undated, 070428). The 2005–2006 field activities confirmed that none of the septic system components remained in place (LANL 2007, 098942). During the 2005–2006 field activities, radioactively contaminated soil in the outfall channel was removed (LANL 2007, 098942).</p> <p>SWMU 21-027(d) consists of the former drainline and outfall for the secondary containment that was around a former aboveground diesel fuel tank (structure 21-047, AOC C-21-028) (Engineering Drawing A5-C142, LASL 1948, 085559). The concrete secondary containment structure was built around the tank in 1948 to contain any potential releases from the tank (Francis 1999, 062745; Engineering Drawing A5-C161, LASL 1948, 085559). A sump was constructed in the center of the south side of the containment, and a drainline was installed in the drainage ditch from the tank containment (LANL 1999, 063182). The first segment of the drainline (approximately 5 ft) from the sump to a gate valve just outside the containment wall was a 4-in. steel pipe. At the gate valve, the drainline changed to a VCP (LANL 1999, 063182). When the wastewater treatment laboratory (former structure 21-033, AOC 21-009) was built, the drainage ditch was rerouted around the building and south toward the rim of DP Mesa (LANL 1991, 007529). The new containment drainline was then installed below ground surface. The outfall for the drainline began near the mesa edge and continued down the hillside toward BV Canyon (LANL 2002, 073107). The fuel tank and concrete containment were removed in 1960 (LANL undated, 070428), and the drainline was removed in March 1965 (LANL 1991, 007529). Prior to 1999, there was no evidence to suggest that the decommissioned aboveground diesel fuel storage</p>			

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		tank had leaked (LANL 2002, 073107). During site preparation activities for the NTISV cold demonstration, petroleum hydrocarbon contamination was detected. The likely source is the former aboveground storage tank, which may have released diesel fuel (LANL 2002, 073107). Contaminated soil/sediment/tuff that was excavated during construction of the NTISV was removed or treated as part of a VCM (LANL 2002, 073107).			
LA-SMA-5.92	21-013(b) 21-013(g) 21-018(a)	<p>SWMU 21-013(b) is the former location of a surface disposal area on the southern edge of DP Mesa, southwest of former MDA V in TA-21. This area contained concrete building debris from the demolition of a waste treatment laboratory (former building 21-033, AOC 21-009) (LANL 1991, 007529). A radiological contamination survey of the building interior before demolition showed that various surfaces were contaminated with plutonium dust (Romero 1963, 000369). It is not known if other materials were disposed of at SWMU 21- 013(b) (LANL 1991, 007529). The building was decontaminated and decommissioned in 1965 (LANL 1991, 007680; LANL undated, 070428). The building was cut into two sections and removed to MDA G where it was burned and disposed of in Pit 4 (Romero 1965, 000370). The concrete foundation was bulldozed from its original site into Los Alamos Canyon (LANL 1991, 007680). All debris was removed in 2005 (LANL 2006, 094361).</p> <p>AOC 21-013(g) consists of two drainlines (along with other building debris), which were observed during a 1990 ER Program site visit (LANL 1990, 007512). The two drainlines were originally believed to be associated with drainage from MDA V. A subsequent investigation determined that the two drainlines are only sections of discarded pipe and are not associated with MDA V as originally supposed (LANL 1990, 007512; LANL 1991, 007529). The origin of the two drainlines and other debris and date on which they were disposed of at SWMU 21-013(g) are not known (LANL 1991, 007529). The drainlines may have been disposed of when an old acid waste line was replaced (LANL 1990, 007512). All debris was removed in 2005 (LANL 2006, 094361).</p> <p>SWMU 21-018(a), or MDA V, is made up of three former wastewater absorption beds located on a fenced 0.88-acre parcel at the west end of TA-21. The absorption beds received wastewater from the DP laundry facility [SWMU 21-018(b)] and a wastewater research laboratory (former building 21-045) (LANL 2004, 087358). The laundry was used to clean radioactively contaminated clothing and was operational from 1945 to 1961 (LANL 1990, 007512). The beds are known to have overflowed as early as 1946 (LANL 2004, 087358). Contaminants released to the absorption beds from the laundry include plutonium isotopes, uranium isotopes, americium-241, strontium-90, gamma-emitting isotopes, and inorganic chemicals (LANL 2004, 087358; LANL 1990, 007512). Potential contaminants discharged to MDA V from building 21-045 operations include plutonium, uranium, and perchlorate (LANL 2004, 087358). During the 2005–2006 investigation, absorption bed material was excavated and removed (LANL 2007, 098942). A total of 10,900 yd³ of absorption bed material</p>	Table 16 – LANL & EPA	<p>1. Los Alamos Canyon (DP Canyon to upper LANL boundary): PCBs, total recoverable cyanide, total recoverable selenium, adjusted gross alpha, total mercury</p> <p>2. Los Alamos Canyon (NM-4 to DP Canyon): adjusted gross alpha, PCBs, total recoverable aluminum, total recoverable cyanide, radium, total mercury</p>	Do Not Delete. Substantial mercury discharges (exceedances of both ATAL and MTAL) to a mercury impaired receiving water. Permittees rescinded deletion request on comments on draft permit.

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		was excavated (LANL 2007, 098942).			
LA-SMA-6.27	21-021 21-027(c)	<p>SWMU 21-027(c) consists of a former drainline and outfall that discharged from the south side of former building 21-006. The outfall discharged 50 ft inside the south TA-21 perimeter fence to a broad, gently sloping area on the south rim of DP Mesa toward Los Alamos Canyon (Engineering Drawing ENG-R 1194, LASL 1956, 024833; LANL 1991, 007529). Building 21-006 was constructed in 1945 as a cafeteria and machine shop (LANL undated, 070428; LANL 1990, 007512). The outfall may have received solvents and oils from the machine shop (LANL 1991, 007529). A 4-in. VCP drainline exited the southeast corner of the building and discharged sanitary wastewater to the SWMU 21-027(c) outfall. Building 21-006 was removed in 1966 (LANL undated, 070428); however, the drainline was left in place (LANL 1991, 007529; LANL 1990, 007512). The entire drainline was removed in 2007 (LANL 2008, 102760).</p> <p>SWMU 21-021 consists of surface soil contamination with radionuclides resulting from emissions from stacks throughout TA-21. The estimated area of soil contamination is approximately 300,000 m² and overlaps all of TA-21 (LANL 1990, 007512). Radionuclides, including plutonium-239 and strontium-90, were known to have been released from stacks throughout TA-21 (LANL 1990, 007512). In 1992, surface samples were collected from 363 locations throughout TA-21 and in drainages around TA-21 and submitted for analysis of radionuclides. Sampling data showed americium-241 and plutonium-239 detected above soil BVs/FVs (LANL 1993, 026073). There is no documentation of nonradioactive chemical releases associated with the stack emissions (LANL 1990, 007512). The approved DP Site Aggregate Area investigation work plan indicated the investigation of SWMU 21-021 was complete and no additional investigations were required (LANL 2004, 088021). Because SWMU 21-021 overlies all other SWMUs and AOCs within TA-21, a request for a CoC for SWMU 21-021 is not expected to be made until investigation of all other TA-21 sites is complete.</p>	Table 15 – LANL & EPA- no discharge	<p>1. Los Alamos Canyon (DP Canyon to upper LANL boundary): PCBs, total recoverable cyanide, total recoverable selenium, adjusted gross alpha, total mercury</p> <p>2. Los Alamos Canyon (NM-4 to DP Canyon): adjusted gross alpha, PCBs, total recoverable aluminum, total recoverable cyanide, radium, total mercury</p>	Delete. Sites qualify for no discharge.
LA-SMA-6.3	21-006(b)	<p>SWMU 21-006(b) is an inactive seepage pit consisting of a brick manhole constructed in a trench (structure 21-118), an inlet acid drainline, an outlet vapor drainline, and a former outfall in the southwest portion of TA-21. The brick seepage pit measures 13 ft × 4 ft × 6 ft deep with a wooden cover. The seepage pit and associated drainlines were installed during the construction of building 21-3 in 1945. A 3-in. Jennite-coated (coal tar sealer) cast-iron inlet drainline exited the southeast side of former building 21-2 and extended approximately 160 ft southward to the seepage pit (structure 21-118). A 2-in. steel outlet drainline ran approximately 100 ft southward to an outfall approximately 8 ft above the surface of a bench below the mesa top above Los Alamos Canyon. The drainlines and seepage pit were installed to receive ether waste from the ethyl ether extraction process as part of the original TA-21 plutonium-purification process conducted in former building 21-2. The ether</p>	Permittees – CoC from NMED HWB and meet long term stewardship criteria.	<p>1. Los Alamos Canyon (DP Canyon to upper LANL boundary): PCBs, total recoverable cyanide, total recoverable selenium, adjusted gross alpha, total mercury</p> <p>2. Los Alamos Canyon (NM-4 to DP Canyon): adjusted gross alpha, PCBs, total recoverable aluminum, total</p>	Do Not Delete.

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		extraction process was discontinued in September 1945. Documentation is not available to confirm if all discharges to the seepage pit also ceased in 1945. The location of the seepage pit and associated drainlines has not been conclusively identified. Building 21-2 was decommissioned in the 1990s and demolished in 2010. SWMU 21-006(b) was investigated along with SWMUs 21-006(a), 21-006(c), and 21-006(d). Samples were collected from 2007 to 2010 and analyzed for target analyte list metals, perchlorate, nitrate, cyanide, SVOCs, VOCs, pH, americium-241, gamma-emitting radionuclides, isotopic plutonium, isotopic uranium, tritium, and strontium-90.		recoverable cyanide, radium, total mercury	
LA-SMA-6.36	21-021 21-024(a)	<p>SWMU 21-021 consists of surface soil contamination with radionuclides resulting from emissions from stacks throughout TA-21. The estimated area of soil contamination is approximately 300,000 m² and overlaps all of TA-21 (LANL 1990, 007512). Radionuclides, including plutonium-239 and strontium-90, were known to have been released from stacks throughout TA-21 (LANL 1990, 007512). In 1992, surface samples were collected from 363 locations throughout TA-21 and in drainages around TA-21 and submitted for analysis of radionuclides. Sampling data showed americium-241 and plutonium-239 detected above soil BVs/FVs (LANL 1993, 026073). There is no documentation of nonradioactive chemical releases associated with the stack emissions (LANL 1990, 007512). The approved DP Site Aggregate Area investigation work plan indicated the investigation of SWMU 21-021 was complete and no additional investigations were required (LANL 2004, 088021). Because SWMU 21-021 overlies all other SWMUs and AOCs within TA-21, a request for a CoC for SWMU 21-021 is not expected to be made until investigation of all other TA-21 sites is complete.</p> <p>SWMU 21-024(a) consists of a former septic system that served the old steam plant (building 21-009) at TA-21. The septic system was constructed in 1945 and consisted of a reinforced concrete septic tank (structure 21-053) that measured 9 ft x 5.75 ft x 7.25 ft deep, a 6-in.-diameter VCP inlet line, and a 4-in. or 6-in. diameter VCP outlet line (Francis 2001, 071281; LANL 1991, 007529). The outfall discharged to the surface on the south rim of DP Mesa above Los Alamos Canyon (Engineering Drawing ENG-R 1195, LASL 1958, 024834). The steam plant reportedly did not house any operations producing hazardous materials; however, fuel oil leaks from the boiler may have entered the septic system by way of floor drains, and common boiler blowdown constituents, such as sulfite and copper salts, may have entered the system in the same way (LANL 1991, 007529). The septic system was decommissioned and left in place in 1966 (LANL 2004, 087461). In 1985, building 21-009 was removed and replaced with a new steam plant, building 21-257. The area was regraded (LANL 2004, 087461). The geophysical survey in 2004 located portions of the pipeline from building 21-009, the tank, and the outlet pipe (LANL 2008, 102760). The septic tank</p>	Table 15 – LANL & EPA – no discharge	<p>1. Los Alamos Canyon (DP Canyon to upper LANL boundary): PCBs, total recoverable cyanide, total recoverable selenium, adjusted gross alpha, total mercury</p> <p>2. Los Alamos Canyon (NM-4 to DP Canyon): adjusted gross alpha, PCBs, total recoverable aluminum, total recoverable cyanide, radium, total mercury</p>	Delete. Sites qualify for no discharge.

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		and inlet and outlet drainlines were removed in 2007. The section of the drainline that lies beneath the road was left in place because the road is active and continues to service DP East (LANL 2008, 102760).			
LA-SMA-10.11	53-002(a)	Consolidated Unit 53-002(a)-99 consists of SWMUs 53-002(a) and 53-002(b). SWMU 53-002(a) consists of two inactive surface impoundments known as the NE and NW impoundments. These impoundments were constructed in 1969, and each measured 210 ft x 210 ft x 6 ft deep with a capacity of 1.6 million gal. (LANL 1990, 007514; Engineering Drawing ENG-C 57804, AEC 1970, XXXXXX). The dikes composing the sidewalls of the impoundments were constructed of compacted tuff lined with 4 to 6 in. of gunite (LANL 1992, 029413). The bottom of each impoundment was lined with 4 in. of bentonite clay. The impoundments were originally constructed to contain all sanitary, industrial, and radioactive wastewater generated at TA-53 with no discharge (LANL 1992, 029413). However, wastewater flows exceeded the evaporative capacity of the NE and NW impoundments, and it became necessary to discharge wastewater from the impoundments to an unlined drainage channel leading to Los Alamos Canyon (LANL 1994, 034756). Discharges occurred on a batch basis through an NPDES-permitted outfall (LANL 1992, 029413). The impoundments were also equipped with an emergency overflow that discharged to the south of the impoundments, near a tributary to Sandia Canyon (LANL 1998, 058841). Beginning in 1989, all radioactive wastewaters from TA-53 were discharged to a third impoundment [SWMU 53-002(b)] (LANL 1990, 007514). The NE and NW impoundments continued to receive all sanitary and industrial wastewater until 1993, when the impoundments were taken out of service (LANL 1994, 034756). The outfall was removed from the Laboratory's NPDES permit in 2001 (LANL 2005, 091498). Remediation of Consolidated Unit 53-002(a)-99 entailed removal of all sludge and liners from the impoundments and excavation of the interior of the impoundments to tuff/bedrock (LANL 2005, 091498). Between 2014 and 2016, 6-in. of base course was placed in the former impoundments, and they are now used to store irradiated metal and concrete shielding blocks.	Table 15 – LANL & EPA – no discharge	1. Los Alamos Canyon (DP Canyon to upper LANL boundary): PCBs, total recoverable cyanide, total recoverable selenium, adjusted gross alpha, total mercury 2. Los Alamos Canyon (NM-4 to DP Canyon): adjusted gross alpha, PCBs, total recoverable aluminum, total recoverable cyanide, radium, total mercury	Delete. Site qualifies for no discharge.
LA-SMA-10.12	53-008	AOC 53-008 is an approximate 3-acre unpaved open area (referred to as a "boneyard") previously used to store used materials and equipment associated with historical experiments conducted at TA-53. Most of the storage area is vegetated with grasses, shrubs, and juniper trees, and several dirt trails also run through it. Materials shown to be present at the Site in 1989 photographs included vacuum pumps, metal ducting, concrete shielding blocks, empty overpack drums, and drums containing steel bearings. This Site was inspected in September 1993 and was found to contain shielding blocks (magnetite concrete and steel), concrete, steel, other metallic debris, and other miscellaneous items. No hazardous materials or chemicals were observed, with the exception of lead stored in a shed (structure 53-621) at the south end of the Site. The area was used for storage from approximately 1972 to 2009. By 2010, much	Permittees – at least 2 stormwater samples collected show no TAL exceedances.	1. Los Alamos Canyon (DP Canyon to upper LANL boundary): PCBs, total recoverable cyanide, total recoverable selenium, adjusted gross alpha, total mercury 2. Los Alamos Canyon (NM-4 to DP Canyon): adjusted gross alpha, PCBs, total recoverable	Do Not Delete. This may be a PCB site discharging to PCB-impaired waters.

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		of the material previously stored at the Site had been removed. The IP does not regulate storm water discharges associated with current conventional industrial activities at the Laboratory. Phase I Consent Order sampling is complete for AOC 53-008. All detected inorganic and organic chemical concentrations and radionuclide activities were below residential SSLs, except for one detection of arsenic. Additional sampling was recommended for AOC 53-008 in the supplemental investigation report for Lower Sandia Canyon Aggregate Area, which was submitted to NMED in July 2017.		aluminum, total recoverable cyanide, radium, total mercury	
DP-SMA-0.6	21-024(l)	SWMU 21-024(l) consists of a former outfall that received liquid waste from the floor drain of the building 21-21 mechanical room via a 3-in. cast-iron drainline. Building 21-021 was constructed in 1946 at TA-21 and was used as a secure vault to store special fissile material, including uranium and plutonium metal. The building was decommissioned in 1978 and remained vacant until it was demolished. During the 2007 DP Site Aggregate Area investigation, the drainline was removed. Consent Order investigations have been completed at SWMU 21-024(l), and the Site was recommended for corrective action complete with controls in the Phase III investigation report for DP Site Aggregate Area. The report was approved by NMED in September 2016. NMED issued a COC with controls for SWMU 21-024(l) in September 2018.	Permittees – CoC from NMED HWB and meets long term stewardship criteria.	1. DP Canyon (Grade control to upper LANL boundary): PCBs, total recoverable aluminum, dissolved copper, adjusted gross alpha 2. DP Canyon (Los Alamos Canyon to grade control): total recoverable aluminum, PCBs, adjusted gross alpha	Do Not Delete.
DP-SMA-4	21-021	SWMU 21-021 consists of surface soil contamination with radionuclides resulting from emissions from stacks throughout TA-21. The estimated area of soil contamination is approximately 300,000 m ² and overlaps all of TA-21 (LANL 1990, 007512). Radionuclides, including plutonium-239 and strontium-90, were known to have been released from stacks throughout TA-21 (LANL 1990, 007512). In 1992, surface samples were collected from 363 locations throughout TA-21 and in drainages around TA-21 and submitted for analysis of radionuclides. Sampling data showed americium-241 and plutonium-239 detected above soil BVs/FVs (LANL 1993, 026073). There is no documentation of nonradioactive chemical releases associated with the stack emissions (LANL 1990, 007512). The approved DP Site Aggregate Area investigation work plan indicated the investigation of SWMU 21-021 was complete and no additional investigations were required (LANL 2004, 088021). Because SWMU 21-021 overlies all other SWMUs and AOCs within TA-21, a request for a CoC for SWMU 21-021 is not expected to be made until investigation of all other TA-21 sites is complete.	Table 15 – LANL & EPA – no discharge	1. DP Canyon (Grade control to upper LANL boundary): PCBs, total recoverable aluminum, dissolved copper, adjusted gross alpha 2. DP Canyon (Los Alamos Canyon to grade control): total recoverable aluminum, PCBs, adjusted gross alpha	Delete. Site qualifies for no discharge.
S-SMA-2	03-045(b) 03-045(c)	SWMU 03-045(b) is the NPDES-permitted outfall (Outfall 001) that received treated sanitary effluent from two of the TA-03 power plant (building 03-22) cooling towers (structures 03-25 and 03-58) and the chlorine building (structure 03-24) and discharged to a small tributary of Sandia Canyon southeast of building 03-22. From 1951 until the mid-1970s, this cooling water contained chromate. Cooling tower	Permittees – active outfalls covered under NM0028355.	1. Sandia Canyon (Sigma Canyon to NPDES Outfall 001: total recoverable aluminum, PCBs, dissolved copper,	Do Not Delete. These are PCB and copper sites discharging to PCB and

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		<p>(structure 03-25) was demolished in 1990, and a new cooling tower (structure 03-592) was constructed at the same location in 1998; the concrete foundation of structure 03-25 collected storm water that discharged to the outfall. All wastewater previously discharged from the TA-03 power plant to SWMU 03-045(b) was treated in a neutralization tank (structure 03-1381); the function of the tank was to adjust the pH of the wastewater before it was discharged to meet NPDES requirements. Sulfuric acid and soda ash were used to adjust the pH of wastewater before discharge to the SWMU 03-045(b) outfall. A sulfuric acid release to the SWMU 03-045(b) outfall from the power plant neutralization tank, structure 03-1381, occurred in May 1990. Low pH values were reported in a 2.5-mi section of the watercourse below the outfall. Soda ash was added along the watercourse to raise the pH.</p> <p>The SWMU 03-045(b) outfall is currently permitted as NPDES outfall 001 on the 2007 LANL NPDES authorization permit. The outfall currently receives treated sanitary effluent from the TA-46 SWSC Plant and Sanitary Effluent Reclamation Facility as well as occasional discharges of power plant cooling tower blowdown. The outfall is also authorized to discharge power plant wastewater from boiler blowdown drains, demineralizer backwash, and floor and sink drains to Sandia Canyon.</p> <p>Phase I Consent Order investigations are complete for SWMU 03-045(b), and the Site was included in the August 2013 supplemental investigation report for Upper Sandia Canyon Aggregate Area. Revision 1 of the report was submitted to NMED under the Consent Order in September 2015. SWMU 03-045(b) was recommended for additional Consent Order soil sampling. This Site was also included in the alternative compliance request for S-SMA-2 that was submitted to EPA in October 2013. In October 2015, a request was made to delete the Site from the IP.</p> <p>SWMU 03-045(c) is an NPDES-permitted outfall (EPA 03A027), located approximately 55 ft east of SWMU 03-045(b). SWMU 03-045(c) previously received effluent from a cooling tower (structure 03-285) that served the generators powering a Laboratory computer system. Cooling tower 03-285 was constructed in 1968, and SWMU 03-045(c) may have historically received chromate-treated water.</p> <p>Cooling tower 03-285 was taken out of service in 2007 and demolished in 2012, and SWMU 03-045(c) now receives blowdown from the cooling towers at the Strategic Computing Complex (building 03-2327), which became operational in 2002. Outfall 03A027 is currently permitted for the discharge of cooling tower blowdown water and other wastewater from structures 03-285 and 03-2327.</p> <p>The Consent Order Phase I investigation has been completed for SWMUs 03-012(b), 03-045(b), and 03-045(c), and these Sites were included in the August 2013 supplemental investigation report for Upper Sandia Canyon Aggregate Area. Revision 1 of the report was submitted to NMED under the Consent Order in September 2015. SWMU 03-045(c) was recommended for additional Consent Order soil sampling to define extent. This Site was also included in the alternative compliance request for S-</p>		2. Sandia Canyon (within LANL below Sigma Canyon): PCBs, total recoverable aluminum, dissolved copper, adjusted gross alpha, total mercury	copper impaired receiving waters. Permittees will rescreen site using SSD process.

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		SMA-2 that was submitted to EPA in October 2013. In October 2015, a request was made to delete the Site from the IP.			
S-SMA-4.1	53-014	AOC 53-014, a lead spill site, is located at a paved storage area in TA-53 west of building 53-18. Lead shot was spilled on the paved surface, and storm water washed the lead into an asphalt-lined channel that joins a drainage below an NPDES-permitted outfall (03A113). The lead shot was observed at a number of locations in the channel but not below a large catchment approximately 50 ft below the canyon rim. This Site was not originally identified in the 1990 SWMU report but was discovered only after the 1994 RFI work plan for OU 1100 had been prepared. A VCA was conducted at this Site in 1997 to remove the lead shot that had spilled. Shallow (0–0.5 ft bgs) VCA confirmation samples were collected in the drainage but were not analyzed for PCBs because they are not known to have been used at the Site. No additional sampling was required under the Consent Order. The Site received a COC without controls in July 2013. A certification of completion of corrective action under the IP was submitted to EPA on August 21, 2013.	Permittees – CoC from NMED HWB and meets long term stewardship criteria	1. Sandia Canyon (Sigma Canyon to NPDES Outfall 001): total recoverable aluminum, PCBs, dissolved copper, 2. Sandia Canyon (within LANL below Sigma Canyon): PCBs, total recoverable aluminum, dissolved copper, adjusted gross alpha, total mercury	Do Not Delete. This may be a PCB site discharging to PCB impaired waters. PCBs were not sampled in the Consent Order investigation, so soil data is needed to make further decisions about this site.
S-SMA-4.5	20-002(d)	SWMU 20-002(d) is a former firing point located near a former manhole (structure 20-3) in the central part of former TA-20 (LANL 1994, 034756). Fewer than 10 implosion shots were fired near structure 20-3 (LANL 1994, 034756). One of these shots, containing 500 lb of Composition B (RDX and TNT), did not detonate completely (Courtright 1962, 005971). A 1962 LANL memorandum describes two cleanup efforts related to this incident: one conducted immediately after the incident and a second that was part of the 1948 Sandia Canyon cleanup conducted before the construction of East Jemez Road (Courtright 1962, 005971). Other historical documents indicate small pieces of HE were found and removed from this site at various times, including in July 1966, July 1967, and June 1969 (Drake and Courtright 1966, 005985; Drake and Courtright 1967, 005986; Drake and Courtright 1969, 005987). No HE was found during subsequent inspections conducted in April 1971, May 1973, and June 1975 (Drake 1971, 002076; Drake 1973, 005043; Drake, et al. 1975, 005047).	Table 15 – LANL & EPA – no discharge	1. Sandia Canyon (Sigma Canyon to NPDES Outfall 001): total recoverable aluminum, PCBs, dissolved copper, 2. Sandia Canyon (within LANL below Sigma Canyon): PCBs, total recoverable aluminum, dissolved copper, adjusted gross alpha, total mercury	Delete. Site qualifies for no discharge.
CDB-SMA-0.55	46-004(e2) 46-004(m)	AOC 46-004(e2) is the outfall from roof, floor, and sink drains in building 46-42 at TA 46. The outfall consists of a 4-in.-diameter pipe located approximately 50 ft northeast of building 46-42 at the head of a drainage ditch associated with SWMU 46-006(a). The outfall is located approximately 3 ft below the level of the asphalt pavement. Building 46-42 was constructed as an equipment checkout facility and contains electronics and robotics laboratories. Much of the effluent historically discharged from the outfall was blowdown and condensate. Hazardous materials might have been handled in historical machining operations, and solvents may be used in conjunction with the laboratories. In the mid-1990s, the floor and sink drains that discharged to this outfall either were removed from service or were rerouted to the sanitary sewer system. The outfall currently receives storm water only from building	46-004(e2): EPA – admin changes from 2010 permit to remove site-SMA association. Site will continue to be monitored on permit at CDB-SMA-0.25 46-004(m): Permittees –	Canada del Buey (within LANL): PCBs, adjusted gross alpha	46-004(e2) - Delete. 46-004(m) - Do Not Delete. This is a PCB site discharging to PCB impaired waters.

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		<p>46-42 roof drains.</p> <p>The Site was recommended for corrective action complete without controls in the supplemental investigation report for Upper Cañada del Buey Aggregate Area, submitted to NMED in 2016. SWMU 46-004(m) consists of a former NPDES-permitted outfall (04A013), located approximately 60 ft north of building 46-30. The outfall protrudes from a 10-ft-deep bank on the hillside north of building 46-30. The outfall discharged effluent from an industrial drainline in building 46-30 to a ditch at the foot of the bank. The ditch channeled wastewater to a storm drain culvert that discharges into Cañada del Buey. Engineering drawings show this industrial drainline received effluent from the roof drains, laboratory sinks, and floor drains in building 46-30. Building 46-30 was constructed as a hydraulics laboratory and contained a high-bay area with a crane, an actuator test area, and a small machine shop. In December 1995, the outfall was removed from the NPDES permit. Before the outfall was removed from the NPDES permit, all discharges to the outfall from building 46-30 ceased.</p> <p>The Cerro Grande fire of 2000 burned moderately to severely in the vicinity of this SWMU. As a result of the fire, the vegetative ground cover and canopy were mostly destroyed. Wattles were installed on slopes within the drainages, and rock check dams were placed in the main drainages to dissipate storm water run-on from upslope locations. The lower portion of the sloped area was hand-raked, reseeded with native grasses, and mulched with straw. The upper portion of the sloped area was hydromulched from above. An earthen base-course berm was installed along the fire road at the toe of the slope to provide additional protection from sediment migration. NMED issued a COC without controls under the Consent Order for this Site in July 2013.</p> <p>SWMU 46-004(m) is a former NPDES-permitted outfall (04A013) located approximately 60 ft north of building 46-30 at TA-46. The outfall protrudes from a 10-ft-deep bank on the hillside north of building 46-30 (LANL 1993, 020952; Santa Fe Engineering 1994, 602385). The outfall discharged effluent from an industrial drainline in building 46-30 to a ditch at the foot of the bank (LANL 1993, 020952). The ditch channeled wastewater to a storm drain culvert that discharges into Cañada del Buey (LANL 1993, 020952). Building 46 30 was constructed as a hydraulics laboratory and contained a high-bay area with a crane, an actuator test area, and a small machine shop (LANL 1993, 020952). Drains contributing to this outfall included 4 floor sinks, a floor drain, a trench drain, and 4 roof drains (Santa Fe Engineering 1994, 602385). During a 1994 inspection, only the floor drain and roof drains were being used (Santa Fe Engineering 1994, 602385). The floor sinks were plugged and the trench drain was not being used (Santa Fe Engineering 1994, 602385). The floor drain received once-through noncontact cooling water from an air compressor and the roof drains received storm water (Santa Fe Engineering 1994, 602385). The NPDES permit</p>	<p>Significant industrial materials were not used or were remediated such that stormwater is not impacted.</p>		

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		required monitoring four times per year for total residual chlorine and annually for water quality parameters (LANL 1994, 243473). In December 1995, the outfall was removed from the NPDES permit (LANL 1999, 064617). Before the outfall was removed from the NPDES permit, all discharges to the outfall from building 46-30 ceased (LANL 2008, 101803).			
CDB-SMA-1	C-46-001	AOC C-46-001 is the location of a one-time mercury spill in the vicinity of building 46-75 at TA-46. On July 22, 1975, 250–500 g (0.55–1.1 lb) of mercury reportedly spilled on the ground near building 46-75 (Ahlquist 1975, 008501). The spill was cleaned up shortly after it occurred (Ahlquist 1975, 008501). The memorandum documenting the spill does not provide the precise location of where the spill occurred at building 46-75; however, aerial photos show the entire area surrounding building 46-75 was paved at the time of the spill (LANL 1993, 020952).	EPA – significant industrial materials were not used or were remediated such that stormwater is not impacted.	Canada del Buey (within LANL): PCBs, adjusted gross alpha	Delete per NMED 401 certification comment 20.e.
CDB-SMA-1.35	46-004(a2) 46-004(u) 46-004(v) 46-004(x) 46-006(d) 46-008(f)	<p>SWMU 46-004(a2) is an inactive outfall located on the east side of building 46-31 at TA-46. The outfall discharged to a shallow ditch on the east side of building 46-31, which traversed approximately 50 ft north to a storm drain culvert discharging into Cañada del Buey (Engineering Drawing ENG-R 1521, LASL 1964, 601766; Santa Fe Engineering Ltd. 1994, 101839). The SWMU 46-004(a2) outfall received effluent from a 6-in.-diameter industrial drainline that was historically plumbed to the sinks and drains in rooms 101, 103, and 105 of building 46-31 (LANL 1993, 020952). These drains received floor washings, condensate, boiler drainage, and laboratory waste (Santa Fe Engineering Ltd. 1994, 101839). Potential contaminants include metals such as mercury, and thorium, VOCs, SVOCs, PCBs, and uranium isotopes (ICF Kaiser 1992, 040093; LANL 1993, 020952). Building 46-31 housed test cells with electrical furnaces for thermal testing of graphite and uranium-235/uranium-238 fuel rods in support of the Rover Program. Welding experiments involving thorium were also conducted in building 46-31 (Roberts and Reading 1992, 040066; Roberts and Griggs 1992, 252836). By 1994, the outfall pipe was plugged, and all drains leading to the outfall either were removed from service or were rerouted to the SWSC plant (Santa Fe Engineering Ltd. 1994, 101839).</p> <p>SWMU 46-004(u) is an inactive outfall north of former building 46-87 at TA-46. The outfall consisted of an 8-in.-diameter cast-iron pipe that discharged into Cañada del Buey approximately 8 ft from the building (Engineering Drawing ENG-C 32304, LASL 1966, 601767). This pipe was the overflow pipe for a concrete wet well located in former building 46-87 (LANL 1993, 020952). The wet well was designed as a holding pit for deionized water and historically received effluent from a closed-loop cooling water system serving buildings 46-16, 46-25, and 46-31 (LANL 1993, 020952). The wet well also received effluent from sink drains in building 46-25, which was a battery storage facility also used for small-scale painting activities in support of the Rover Program (ICF Kaiser Engineers 1992, 054783). The sink drains were reportedly used only for handwashing and coffee making (ICF Kaiser Engineers 1992, 054783). At the</p>	Table 15 – LANL & EPA – no discharge	Canada del Buey (within LANL): PCBs, adjusted gross alpha	Delete. Sites qualify for no discharge.

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		<p>time of a 1993 inspection, the sink drains had been plugged except those used for handwashing and potable water (Santa Fe Engineering 1994, 602383). Building 46-87 was also the pump house for an adjacent cooling tower (former building 46-86) that housed two wet well systems and mechanical equipment associated with the cooling tower (LANL 1993, 020952). Building 46-87 also stored water-treatment chemicals including sodium hydroxide and ethylene glycol (Santa Fe Engineering Ltd. 1994, 602383). Potential contaminants include metals, VOCs, and SVOCs (LANL 1993, 020952). Building 46-87 underwent D&D in December 2001 (LANL 2008, 101882). By the early 1990s, the outfall had been plugged, and effluent discharged to the wet well was periodically pumped out and disposed of at the SWSC plant (Santa Fe Engineering Ltd. 1994, 602383). By 1998, the building 46-25 drains that discharged to the wet well were removed from service (LANL 1998, 101808).</p> <p>SWMU 46-004(v) is an inactive outfall located north of former building 46-87 at TA-46. The outfall consisted of a 6-in.-diameter cast-iron pipe that discharged effluent from the roof and floor drains of former building 46-87 into Cañada del Buey approximately 5 ft from the building (Engineering Drawing ENG-C 32304, LASL 1966, 601767). Building 46-87 was the pump house for an adjacent cooling tower (former building 46-86) that housed two wet well systems and mechanical equipment associated with the cooling tower (LANL 1993, 020952). Potential contaminants include SVOCs (LANL 1993, 020952). The cooling tower is believed to have operated only 6 months (ICF Kaiser Engineers 1992, 054783). This building was also used to store water- treatment chemicals including sodium hydroxide and ethylene glycol (Santa Fe Engineering Ltd. 1994, 101838). By the early 1990s, the floor drains in former building 46-87 had been plugged, and the outfall was receiving only discharges from the roof drains (Santa Fe Engineering Ltd. 1994, 101838). Building 46-87 underwent D&D in December 2001 (LANL 2008, 101882).</p> <p>SWMU 46-004(x) is an outfall located approximately 30 ft north of building 46-31 at TA-46. The outfall consists of a 6-in.-diameter pipe that extends approximately 1 ft beyond the steep canyon slope and discharges to a 1- to 2-ft-wide drainage that stretches to the toe of the slope of Cañada del Buey (LANL 1996, 054929). The OU 1140 RFI work plan indicated that this outfall was probably an industrial drain that services floor and/or sink drains in building 46-31 (LANL 1993, 020952; ICF Kaiser Engineers 1992, 054763). An inspection of the drains in building 46-31 showed that this drainline only received roof drainage and was not connected to floor drains or sink drains (Santa Fe Engineering 1994, 101839). Sink and floor drains were formerly discharged to outfall 03A043 [SWMU 46-004(y)].</p> <p>SWMU 46-006(d) is an area of potential soil contamination located on the north side of building 46-31 at TA-46. Oils and possibly other materials were spilled in the area (LANL 1993, 020952). The area is approximately 50 ft × 350 ft and is level near building 46-31 but drops steeply towards the northern perimeter fence of TA-46 and</p>			

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		<p>into Cañada del Buey (LANL 1993, 020952). With the exception of two asphalt-paved delivery and parking areas located at the eastern and western boundaries of this SWMU, most of the area is unpaved (LANL 1993, 020952). Engineering drawing ENG-C-42679 (LASL 1974, 601777) shows that a drain from room 111A also discharged to this SWMU. During a 1986 site visit, 55-gal. drums, cans, rusty chemical storage containers, and a thick layer of oil were observed on the northern slope of the site (Perkins 1986, 252832). SWMUs 46-004(a,b,c) are located within the SWMU 46-006(d) boundary. Drainages that flow into Cañada del Buey, north of the TA- 46 perimeter fence, receive runoff from SWMU 46-006(d). Potential contaminants include metals (such as mercury), VOCs, SVOCs, PCBs, oils, plutonium isotopes, and uranium isotopes (LANL 1993, 020952).</p> <p>SWMU 46-008(f) is an inactive paved storage area located next to the southeast corner of building 46-31 at TA-46. During a March 1986 site visit, two 55-gal. drums, containers labeled methanol, three old cans, drums, and unmarked cylinders were observed and a strong smell of oil was noted (Perkins 1986, 252832). Four barrels of oil, which could have been product or waste oil, were observed at this location (LANL 1990, 007513). The 50-ft x 100-ft area is level and paved with asphalt except for a narrow strip along the fence on the east side of the storage area (LANL 1993, 020952). The storage area has not been used since before 1990 (LANL 1990, 007513). Potential contaminants include metals, VOCs, SVOCs, oils, and uranium isotopes (LANL 1993, 020952).</p>			

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CDB-SMA-1.54	46-004(h) 46-004(q) 46-004(d)	<p>SWMU 46-004(h) consists of an area of potential soil contamination associated with exhaust emissions from stacks on building 46-16 and an inactive outfall from an industrial drainline in building 46-16 at TA-46. Exhausts emissions were generated from work in building 46-16 involving experiments conducted with uranium-loaded graphite and tests of uranium fuel rods as part of the Rover Program between the late 1950s and early 1970s (LANL 1993, 020952; Welty 1958, 252832). Potential contaminants include metals (such as mercury), VOCs, SVOCs, and uranium isotopes (LANL 1993, 020952).</p> <p>SWMU 46-004(q) is an inactive outfall located approximately 40 ft north of building 46-58 at TA-46. The outfall consists of a 6-in.-diameter cast-iron pipe that discharged into Cañada del Buey (LANL 1993, 020952). The outfall protrudes from a steep slope of loose fill; the end of the pipe is supported by a pile of rocks (LANL 1996, 054929). A drainage ditch has formed below the outfall, leading approximately 15 ft to a large ditch scoured by runoff from a 2 ft-diameter culvert that receives parking lot runoff from the northeast quadrant of TA-46 (LANL 1996, 054929). The source of the discharge to the outfall is not known (LANL 1996, 054929). An investigation of drainlines at building 46-58 identified two abandoned pipes from an unknown source near the northwest corner of the building as well as an active drainline discharging to two below grade seepage pits (Santa Fe Engineering 1994, 101839). The active drainline is designated as SWMU 46-004(e) and was connected to two sink drains in building 46-58, one of which was in a fume hood. It is not known whether the two abandoned drainlines were associated with SWMU 46-004(q). Because the source was unknown, the outfall was treated as an industrial outfall (LANL 1996, 054929). Potential contaminants include metals, VOCs, SVOCs, and uranium isotopes (LANL 1993, 020952).</p> <p>SWMU 46-006(d) is an area of potential soil contamination located on the north side of building 46-31 at TA-46. Oils and possibly other materials were spilled in the area (LANL 1993, 020952). The area is approximately 50 ft × 350 ft and is level near building 46-31 but drops steeply towards the northern perimeter fence of TA-46 and into Cañada del Buey (LANL 1993, 020952). With the exception of two asphalt-paved delivery and parking areas located at the eastern and western boundaries of this SWMU, most of the area is unpaved (LANL 1993, 020952). Engineering drawing ENG-C 42679 (LASL 1974, 601777) shows that a drain from room 111A also discharged to this SWMU. During a 1986 site visit, 55-gal. drums, cans, rusty chemical storage containers, and a thick layer of oil were observed on the northern slope of the site (Perkins 1986, 252832). SWMUs 46-004(a,b,c) are located within the SWMU 46-006(d) boundary. Drainages that flow into Cañada del Buey, north of the TA-46 perimeter fence, receive runoff from SWMU 46-006(d). Potential contaminants include metals (such as mercury), VOCs, SVOCs, PCBs, oils, plutonium isotopes, and uranium isotopes (LANL 1993, 020952).</p>	Table 15 – LANL & EPA – no discharge	Canada del Buey (within LANL): PCBs, adjusted gross alpha	Delete. Sites qualify for no discharge.

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CDB-SMA-1.55	46-003(e)	SWMU 46-003(e) is an inactive septic system consisting of a septic tank (structure 46-66), a siphon tank (structure 46-67), a distribution box (structure 46-68), and a drain field located approximately 20 ft east of building 46-58 outside the TA-46 perimeter fence (Engineering drawing ENG-C 42762, LASL 1975, 101827). Septic tank 46-66 was installed in 1960 and served the restroom facility, shower, water cooler, janitorial sink, and mechanical room floor drain in building 46-58, which houses offices, a laboratory, machine shop, and an equipment room (LANL 1993, 020952; Roberts and Reading 1992, 040066; Roberts and Griggs 1992, 252836)). The septic system was removed from service in approximately 1972 to 1973 (Gonzales 1981, 000646), and its drainline was rerouted to the SWMU 46-002 surface impoundment system. Potential contaminants include VOCs, SVOCs, metals, and isotopes of plutonium and uranium (LANL 1993, 020952). Septic tank 46-66 was reportedly emptied, filled, and left in place (Engineering drawing ENG-C 42762, LASL 1975, 101827). During the 2010 Consent Order investigation, the SWMU 46-003(e) septic tank was discovered to contain sludge and a water layer (LANL 2011, 203410). This waste was likely placed in the septic tank after the system was removed from service because the inlet and outlet lines were plugged (LANL 2011, 203410). The water layer, sludge, and septic tank were removed and managed as LLW at Area G at TA-54 (LANL 2011, 203410).	Table 15 – LANL & EPA – no discharge	Canada del Buey (within LANL): PCBs, adjusted gross alpha	Delete. Site qualifies for no discharge.
CDB-SMA-1.65	46-003(b)	SWMU 46-003(b) is an inactive septic system approximately 60-ft southwest of building 46-77 at TA-46. The septic system consisted of a septic tank (structure 46-22), a distribution box (structure 46-29), associated drainlines, and drain field located approximately 50-ft south of building 46-77 at TA-46 (Engineering Drawing R-1521, LASL 1964, 602382). This septic system was installed in 1956 and served the restroom facilities in building 46-17, which housed a generator that charged batteries for the Rover Program (LANL 1993, 020952). Potential contaminants identified for this system were volatile and semivolatile organic chemicals (LANL 1993, 020952). The septic system was removed from service in 1973 (Gonzales 1981, 000646), and drainlines that discharged to SWMU 46-003(b) were rerouted to the SWMU 46-002 surface impoundment system (LANL 1993, 020952). Septic tank 46-22 was reportedly emptied, backfilled, and left in place (Engineering Drawing ENG-C 42762, LASL 1975, 101827). The drainlines that previously served this septic system were rerouted to the SWSC plant in the early 1990s and are currently active (LANL 1996, 101813). No evidence of the septic tank was found during the geophysical survey conducted during the 2010 Consent Order investigation, indicating the tank had been removed (LANL 2011, 203410).	Table 15 – LANL & EPA – no discharge	Canada del Buey (within LANL): PCBs, adjusted gross alpha	Delete. Site qualifies for no discharge.
M-SMA-1.2	03-049(a)	SWMU 03-049(a) is an active NPDES-permitted outfall (03A022) located south of the Sigma Building (03-66). The outfall formerly discharged treated cooling water from a former cooling tower (structure 03-127), which served the Sigma Building, and	Permittees – Active outfall currently	Mortandad Canyon (within LANL): adjusted gross alpha, PCBs,	Do Not Delete. This is a copper site discharging to copper

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		continues to discharge runoff from six roof drains on the Sigma Building. The cooling tower operated from 1960 to 1999. From 1984 to 1990, the outfall also received discharge from rinse tanks associated with the electroplating operation in the Sigma Building. The tanks contained the final rinse from electroplating and surface-finishing experimental components. Although the rinse tanks were flushed continually with tap water to reduce contaminant buildup, trace amounts of metals, acids, cyanide, and DU were introduced into the rinse water. The NPDES permit allowed discharge of 4680 gal./d of treated cooling water and 24,000 gal/d of electroplating rinse water. The outfall predated the CWA and NPDES and was likely permitted in the mid-1970s; permit monitoring requirements are not available. Between 1990 and 1999, the outfall received treated cooling water and roof-drain runoff. The outfall currently discharges roof-drain runoff to upper Mortandad Canyon. SWMU 03-049(a) is permitted under the Laboratory's NPDES industrial and sanitary Permit, NM0028355. Phase I Consent Order sampling is complete for SWMU 03-049(a). Additional Phase II sampling to define extent as well as remediation were proposed in the supplemental investigation report for the Upper Mortandad Canyon Aggregate Area, submitted to NMED in December 2015.	permitted under NM0028355.	dissolved copper, total mercury	impaired waters. The current operational outfall is permitted, but soil data should be evaluated to ascertain the impact and complete affected area from the historic discharge containing the electroplating rinse water residuals.
M-SMA-3.1	48-007(b)	SWMU 48-007(b) is a former NPDES-permitted outfall (01604A) that discharged noncontact cooling water used to cool a magnet and laser housed in the main radiochemistry laboratory (building 48-01). The outfall is located north of building 48-01 and formerly discharged up to 4300 gal./d of cooling water that flowed into Mortandad Canyon. The outfall was removed from the NPDES permit on September 19, 1997, because industrial wastewater discharges were discontinued. Presently, the outfall receives only storm water. Phase I Consent Order investigations are complete for SWMU 48-007(b). All detected constituents were below residential SSLs and SALs, except for benzo(a)pyrene, detected slightly above the residential SSL in one surface sample. The Site meets residential risk levels and was recommended for corrective action complete without controls in the Upper Mortandad Canyon Aggregate Area supplemental investigation report, submitted to NMED in December 2015. SWMU 48-007(b) will be eligible for a COC upon approval of the report by NMED.	Permittees: Significant industrial materials were not used or were remediated such that stormwater is not impacted.	Mortandad Canyon (within LANL): adjusted gross alpha, PCBs, dissolved copper, total mercury r	Do Not Delete.
M-SMA-9.1	35-016(f)	AOC 35-016(h) consists of three storm drains located north of building 35-213. The storm drains were installed in 1979 to handle storm water runoff from roof drains of building 35-213, the nearby parking lot, and discharge from a water deionizer in building 35-213 (LANL 1992, 007666; LANL 1996, 054422). Engineering drawing ENG C-44771 shows the locations of the outfalls to the northwest and northeast of building 35-213 (LANL 1981). Deionizer wastes contain naturally-occurring metals and other inorganic constituents that are concentrated during the deionization process. The drain from the water deionizer was rerouted to the RLW drain system in the mid-1990s and no longer discharges to the storm water system (LANL 2015, 601063). The	Table 15 LANL & EPA – no discharge	Mortandad Canyon (within LANL): adjusted gross alpha, PCBs, dissolved copper, total mercury	Delete. Site qualifies for no discharge.

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		storm drain that handles the runoff from roof drains is located on the north side of building 35-213. The storm drain that handled discharges from the water deionizer is located on the northeast side of building 35-213. This storm drain currently handles only storm water runoff from the area around building 35-213. The third storm drain that handles storm water from the nearby parking lot is located northwest of building 35-213. All three storm drains discharge into Mortandad Canyon. Drain lines from building 35-213 were suspected of containing tritium (LANL 1990, 007513).			
M-SMA-10	35-008, 35-014(e)	<p>SWMU 35-008 is the location of an inactive surface disposal area located north of building 35-85 on the edge of Mortandad Canyon. Debris at the Site consists of construction debris, including scrap metal and pipe, paint cans, a 55-gal. drum, and miscellaneous building materials refuse such as a large concrete slab, conduits, asphalt, pipe, and reinforcing rods. During a site inspection in 1991, only a small amount of debris, including tubing, scrap metal, and soda cans, was observed at the Site. The surface disposal area has likely been in existence since 1977 when the nearby Chemical Laser Facility (building 35-85) was constructed. Debris associated with SWMU 35-008 extends from the canyon rim to the canyon floor. Some of the dielectric oil associated with SWMU 35-014(e) flowed northward to the mesa edge and partially down the mesa slope over portions of the SWMU 35-008 disposal area. SWMU 35-008 and SWMU 35-014(e) were investigated together during the 1994, 1995, and 1997 RFIs and 2004 investigation. All detected inorganic and organic chemical concentrations and radionuclide activities from Consent Order samples were below residential SSLs and SALs. A request for a COC for Site 35-008 was submitted to NMED in August 2011. NMED granted the Site a COC without controls on October 14, 2015.</p> <p>SWMU 35-014(e) is an area of oil-stained soil on the northern edge of Ten Site Mesa directly north of building 35-85. The 1990 SWMU report described SWMU 35-014(e) as three dielectric oil spill areas associated with building 35-85; however, the 1992 RFI work plan described each spill area as a separate SWMU. The stained soil associated with SWMU 35-014(e) may have been a result of a non-PCB (<50 mg/kg) dielectric oil spill that occurred east of building 35-188 when a forklift punctured an aboveground oil storage tank. The oil tank was removed before 1992. The non-PCB dielectric oil was used in laser experiment conducted in building 35-85. The volume of oil released is not known. However, it was reported that oil from the release flowed northward to the mesa edge and partially down the mesa slope over portions of the SWMU 35-008 disposal area. A 1984 photograph shows that the spill did flow down the side of the mesa. Reports also suggest that oil-stained soil may have been pushed over the mesa during the cleanup of the spill (the spill cleanup is not documented). After the oil spill, an extension to building 35-85 was constructed between building 35-188 and the edge of the mesa to house laser experiments. The</p>	Permittees – CoC from NMED HWB and meets long term stewardship criteria.	Mortandad Canyon (within LANL): adjusted gross alpha, PCBs, dissolved copper, total mercury	Do Not Delete. This is a gross alpha site discharging to adjusted gross alpha impaired receiving waters.

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		building extension covers a portion of the area of the reported oil spill. The construction of this extension may have included site leveling, soil stabilization, and extension and stabilization of the mesa edge by backfilling with soil and riprap materials. During a site visit in 1997, stained soil was visible on the slope near the edge of the mesa as a dark stain that covered an area measuring approximately 15 × 10 ft. No stained soils or odors were apparent on the mesa top north of building 35-85. SWMU 35-008 and SWMU 35-014(e) were investigated together during the 1994, 1995, and 1997 RFIs and 2004 investigation. All detected inorganic and organic chemical concentrations and radionuclide activities from the 2004 samples were below residential SSLs and SALs. A request for a COC for Site 35-014(e) was submitted to NMED in August 2011. NMED granted the Site a COC without controls on October 14, 2015.			
M-SMA-10.01	35-016(e)	AOC 35-016(e) is a former NPDES-permitted outfall established in 1977 to discharge only noncontact cooling water from the Chemical Laser Facility (building 35-85). The outfall consists of two adjacent 2-in.-diameter steel pipes insulated with fiberglass and wrapped with protective aluminum coating that originate from cooling towers on the roof of building 35-85. The outfall is located north of building 35-85 on the rim of Mortandad Canyon. The volume of water released is not documented, but significant erosion was evident below the outfall. The outfall was deleted from the NPDES permit in April 1987 and decommissioned in 1992. The AOC 35-016(e) outfall is collocated with SWMU 35-008, a former canyon-side disposal area north of building 35-6 and SWMU 35-014(e1), a former dielectric oil spill north of building 35-85. Consent Order samples collected to characterize SWMUs 35-008 and 35-014(e1) were also used to characterize AOC 35-016(e). All detected inorganic and organic chemical concentrations and radionuclide activities from the 2004 samples for SWMUs 35-008 and 35-014(e) were below residential SSLs and SALs. A request for a COC for Site 35-016(e) was submitted to NMED in August 2011. NMED granted the Site a COC without controls on October 14, 2015.	Permittees – Significant industrial materials were not used or were remediated such that stormwater is not impacted.	Mortandad Canyon (within LANL): adjusted gross alpha, PCBs, dissolved copper, total mercury	Do Not Delete. This is a gross alpha site discharging to adjusted gross alpha impaired waters.
M-SMA-10.3	35-016(i)	SWMU 35-016(i) is a storm water outfall that originates from storm water drains south of building 35-85 along Pecos Drive. This outfall consists of an 18-in.-diameter CMP that discharges to Mortandad Canyon and was installed around 1977 when building 35-85 was constructed. The area below the outfall also receives surface runoff from AOC 35-014(e2) and may have provided a pathway for oil spills associated with the former waste-oil impoundment. SWMU 35-016(i) received a COC with controls for storm water monitoring under the Consent Order from NMED in September 2013. AOC 35-014(e2) is the Site of a former oil spill at TA-35 that originated from overflows of a gunite-lined, surface waste-oil impoundment used to store waste dielectric oil in the early 1980s. When the impoundment operated, the oil was periodically pumped	Permittees – Significant industrial materials were not used or were remediated such that stormwater is not impacted.	Mortandad Canyon (within LANL): adjusted gross alpha, PCBs, dissolved copper, total mercury	Do Not Delete. This is a PCB and aluminum site discharging to PCB and aluminum impaired waters.

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		out of the impoundment and recycled. The impoundment was drained in 1988 and decommissioned in 1989. Documented releases from the impoundment consisted of oil spills. Soil samples from oil-stained areas showed detectable PCB concentrations. Consent Order Phase I investigation sampling is complete. AOC 35-014(e2) received a CoC with controls for storm water monitoring under the Consent Order from NMED in September 2013.			
M-SMA-12	35-016(p)	SWMU 35-016(p) is an active storm water system that has handled storm water runoff from the roof of the Nuclear Safeguards Research Building (35-27) since it was constructed in 1964. The north and east sides of building 35-27 are equipped with 6-in.-diameter roof leaders along which direct roof runoff into CMP storm drains. The storm drains connect to a storm drain manhole located approximately 25 ft northeast of the northeast corner of building 35-27. An 18-in.-diameter CMP storm drain originates at this manhole and extends northward toward the edge of Ten Site Mesa. The outfall is located 40 ft below the mesa edge on the south slope of Mortandad Canyon, approximately 60 ft north of the security fence around building 35-27. Phase I Consent Order investigations are complete for SWMU 35-016(p); the Site meets residential risk levels. A COC was requested from NMED in August 2011. NMED granted the Site a COC without controls on October 14, 2015.	Permittees – Significant industrial materials were not used or were remediated such that stormwater is not impacted.	Mortandad Canyon (within LANL): adjusted gross alpha, PCBs, dissolved copper, total mercury	Do Not Delete. This is an aluminum and copper site discharging to aluminum and copper impaired waters.
M-SMA-12.6	05-004	SWMU 05-004 is a former industrial septic system that served former building 05-01 at the west end of TA-05 near the edge of Mortandad Canyon. The septic system consisted of a reinforced concrete septic tank (former structure 05-13) that measured 5 ft square x 7 ft deep, associated inlet and outlet drainlines, and an outfall that discharged south into an unnamed tributary of Mortandad Canyon. The system was installed in May 1948 to serve building 05-01 (a former laboratory) and received industrial waste from laboratory building 05-01 until 1949. A 1952 memorandum states that the septic system was no longer needed to support use of building 05-01 and the structure was being returned to Engineering Division for disposition. The septic system was decommissioned and abandoned in place in December 1959. The types of materials used in building 05-01 are not known but the septic tank was suspected of being contaminated with acid. During the 1985 LASCP, building 05-01 was removed. The septic tank and associated drainlines had been removed before the 1985 LASCP activities, which was confirmed during reexcavation of the area. The outfall area is a 2-ft-wide by 1-ft-deep trench cut into the tuff located at the edge of the mesa. Stormwater BMPS are in place above and downslope of the Site. SWMU 05-004 has been investigated under the Consent Order and recommended for corrective action complete without controls in the approved investigation report for Lower Mortandad/Cedro Canyons Aggregate Area. A request for COC was submitted to NMED in June 2015. In October 2015, NMED responded with the requirement of	Permittees – CoC from NMED HWB and meets long term stewardship criteria	Mortandad Canyon (within LANL): adjusted gross alpha, PCBs, dissolved copper, total mercury	Do Not Delete. This is a gross alpha site discharging to adjusted gross alpha impaired waters.

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		submitting a construction worker scenario human health risk assessment before obtaining a CoC. A construction worker risk assessment and request for CoC without controls was submitted to NMED in December 2018 (DOE 2018, 700157). NMED subsequently issued a CoC without controls for SWMU 54-004 on March 20, 2019.			
M-SMA-13	05-001(c)	AOC 05-001(c) is a former firing point designated as the larger Beta Far Point Site at TA-05 and is known only by references on maps and memoranda. It reportedly was located several hundred feet east of SWMU 05-001(b), but its exact location, dates of operation, and types of potential releases are not known, as reported in the 1990 SWMU report. Ultimately, Beta Far Point Site is believed to have been located 600–700 ft south-southeast of Firing Points 1 [SWMU 05-001(a)] and 2 [SWMU 05-001(b)]. It was located in Cañada del Buey off the toe of the south mesa, 20–30 ft below the mesa top. Two or three 2500-lb shots were detonated at the Site during its period of operation. Shot debris consisted of cabling, tuballoy, steel, aluminum, and wood. The shot debris radius was estimated to be 100–200 yd from the firing point. AOC 05-001(c) was investigated in 1995 and later as part of the Middle Mortandad/Ten Site. Aggregate Area investigation in 2004 and 2005. The approved 2008 investigation report concluded that based on the human health risk-screening assessment results, no potential unacceptable risks or doses from COPCs exist at AOC 05-001(c). Additionally, no potential ecological risk was found for any receptor. All detected chemicals concentrations and radionuclides activities were below residential SSLs and SALs. No further investigation or remediation activities are warranted at AOC 05-001(c). A request for CoC was submitted to NMED in August 2011. NMED granted the Site a CoC without controls on	Permittees – CoC from NMED HWB and meets long term stewardship criteria.	Mortandad Canyon (within LANL): adjusted gross alpha, PCBs, dissolved copper, total mercury	Do Not Delete. This site should probably go through the SSD process.
Pratt-SMA-1.05	35-004(h) 35-016(m) 35-016(k) 35-016(l)	SWMU 35-004(h) consists of a former outdoor SAA that was located near the northeast corner of the former air-filter building (building 35-7 [SWMU 35-003(p)]) and adjacent to former waste line manhole 35-11. Waste accumulated in the SAA reportedly included small quantities of oils, solvents, and Freon and capacitors (LANL 1990, 007513; LANL 2002, 073092). A 1979 photograph shows what appears to be a small storage container/drum on the asphalt paving adjacent to the northeast corner of former building 35-7. A 1983 photograph shows that the container/drum had been replaced by a small rectangular storage cabinet. The SAA was decommissioned prior to the start of D&D activities in 1985, when the sections of the waste lines adjacent to the east and north side of former building 35-7 were removed (LANL 2002, 073092). The SWMU 35-004(h) storage area was situated over the former building 35-7 waste lines and manhole 35-1; when these waste lines were removed, the location of the storage area was also removed. A 1994 inspection of this site notes that it had been repaved after the waste line removal and it was unlikely any former spills were still there (Koch 1994, 045284). In 1996, building 35-7, its foundation, and all remaining inactive buried waste lines were removed to a depth of approximately 15 ft bgs (Byars 1997, 058737). After removal of these structures, the entire area was	35-004(h), 35-016(m): 35-016(k), 35-016(l): Permittees – significant industrial materials were not used or were remediated such that stormwater is not impacted.	Ten Site Canyon (Mortandad Canyon to headwaters): adjusted gross alpha, PCBs. (Pratt Canyon itself is not assessed but drains to Ten Site Canyon, which is the impairment information noted above.)	Delete: - 35-016(k) - 35-016(m) and - 35-004(h) per NMED 401 certification comments 20.d and 20.f. Do Not Delete. 35-016(l) was formerly a high priority site for PCBs. Ten Site (downstream receiving water) is impaired for PCBs.

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		<p>backfilled with clean fill and regraded (LANL 2002, 073092).</p> <p>SWMU 35-016(k) is a former NPDES-permitted outfall (04A116) that handled cooling water from the gas laser building (35-29) at TA-35. The outfall was installed in 1961 and deactivated in 1987. It handled once through cooling water from a closed heat-exchange system that served a gas laser in building 35-29. The drain line runs eastward and discharges into a riprap-lined channel, which drains into a small tributary of Ten Site Canyon, informally known as Pratt Canyon.</p> <p>SWMU 35-016(k) and AOC 35-016(l), along with numerous other SWMUs and AOCs, were investigated as a single Site. The same surface sampling data set applies to both Sites.</p> <p>A request was submitted to NMED in August 2011 under the Consent Order for a CoC. NMED granted SWMU 35-016(k) a CoC with controls on October 14, 2015.</p> <p>AOC 35-016(l) – Consolidated Unit 35-016(k)-00 consists of SWMU 35-016(k) and AOC 35-016(l). AOC 35-016(l) consists of active daylight discharge channels that were established in 1961 to handle storm water runoff from Building 35-29 and sterilized water leaks from an ultraviolet water sterilizer in Room 001A of Building 35-29 (LANL 1992, 007666). The 1990 SWMU Report indicated oil spills have occurred near building 35-29 (LANL 1990, 007513). Stained areas from past dielectric oil spills [AOCs 35-014(c) and 35-014(d)] are present in the source areas for these channels (LANL 2002, 073092). Another area at the head of the channel, AOC 35-018(a), is the site of a transformer near the southwest corner of Building 35-29 that leaked transformer oil. A VCA conducted there removed soil contaminated with PCBs and PAHs (LANL 2002, 073092). During a 1988 site visit, the concrete catch basin for these drains had gamma radiation readings that exceeded FVs. The drainages flow eastward to a 24-in. CMP outfall located on the north side of the security fence for Building 35-27, discharging to the same riprap-lined channel draining into Pratt Canyon as SWMU 35-016(k) (LANL 2002, 073092).</p> <p>SWMU 35-016(m) consists of a 1.5-in.-diameter metal blowdown line and a 4-in.-diameter metal drainline intended to serve receive cooling tower blowdown from a cooling tower at building 35-27 (LANL 1996, 055075). This outfall is located on the east end of the TA-35 mesa top south of a cooling tower (structure 35-33) and east of the Nuclear Safeguards Research Building (35-27). The formerly permitted outfall associated with the cooling tower was intended for discharging treated cooling tower blowdown from two planned reactors in building 35-27. However, the reactors were never installed, the cooling tower was never operated, and the outfall never received blowdown (Sontag 1996, 054766). The SWMU 35-016(m) outfall has discharged only storm water runoff from paved parking areas at the east end of the TA-35 mesa top since its installation (LANL 2002, 073092).</p>			CCW requested more information [35-106(m)] was provided in the Permittees comments on the draft permit.
T-SMA-4	35-016(c) 35-016(d)	SWMU 35-016(c) consists of two former NPDES-permitted outfalls, established in 1964 to discharge noncontact cooling water from building 35-67. Building 35-67	Permittees– Significant	Ten Site Canyon (Mortandad Canyon to	Do Not Delete.

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		<p>housed offices and heating and cooling systems in support of other TA-35 buildings. The drainline to one outfall ran about 75 ft southward to its point of discharge into Ten Site Canyon. The other outfall, deactivated in 1987, ran about 125 ft from building 35-67 to its point of discharge into Ten Site Canyon. The two outfalls were combined by 1985. The noncontact cooling water was from building cooling systems and was not process-specific.</p> <p>The Consent Order investigation for SWMU 35-016(c) is complete. A CoC was requested from NMED in August 2011. NMED granted the Site a CoC with controls on October 14, 2015.</p> <p>SWMU 35-016(d) is a former NPDES-permitted outfall constructed in 1962 to handle noncontact cooling water from the reactor components development building (35-46). Building 35-46 housed offices and heating and cooling systems in support of other TA-35 buildings. By 1990, this outfall had been removed from the NPDES permit. The drainline runs about 50 ft southward to its point of discharge into Ten Site Canyon. The noncontact cooling water was from building cooling systems and was not process-specific. The Consent Order investigation for SWMU 35-016(d) is complete. A CoC was requested from NMED in August 2011. NMED granted the Site a CoC with controls on October 14, 2015.</p>	Industrial materials were not used or were remediated such that stormwater is not impacted.	headwaters): adjusted gross alpha, PCBs	This is a gross alpha site discharging to adjusted gross alpha impaired waters.
T-SMA-5	35-016(a)	<p>SWMU 35-016(a) is a former NPDES-permitted outfall that originally consisted of an 8-in.-diameter metal pipe with a valve and a 6-in. VCP placed in a trench cut into the tuff that discharged into Ten Site Canyon. The outfall was established in 1958 to handle noncontact cooling water from the sodium testing building (35-34) and was eliminated from the NPDES permit in 1985 when discharges to the outfall ceased. The drainlines were decommissioned and removed in 1987, and the remaining section of the trench now serves as a storm water-collection channel for a small area on the south side of Ten Site Mesa at TA-35. SWMU 35-016(a) discharges to the same location as the SWMU 35-016(q) storm water outfall in Ten Site Canyon. Aerial photographs from 1965 show a diagonal trench extending from the north end of SWMU 35-016(a) in a southeasterly direction that appears to connect with the north end of SWMU 35-016(q). Aerial photographs from 1974 show that the diagonal trench and approximately two-thirds of the northern 2020 Update to the SDPPP, Revision 1 EM2021-0003 382 VOLUME 2: SANDIA/MORTANDAD WATERSHED NPDES Permit No. NM0030759, May 1, 2021 portion of the SWMU were no longer present and may have been backfilled. The mid-1990s aerial photographs show this Site to be much the same as it appeared in 1974. Consent Order investigations are complete for SWMU 35-016(a). The Site meets residential risk levels. A request for a CoC was submitted to NMED in August 2011. NMED granted the Site a CoC without controls on October 14, 2015.</p>	Permittees – Significant industrial materials were not used or were remediated such that stormwater is not impacted.	Ten Site Canyon (Mortandad Canyon to headwaters): adjusted gross alpha, PCBs.	<p>CCW has requested more information which was provided in the Permittees comments on the draft permit.</p> <p>Do Not Delete. Without sampling data, it is difficult to determine whether the soil cleanup was adequate. The permit currently requires a confirmation sample.</p>
T-SMA-6.8	35-010(e)	AOC 35-010(e) is a former NPDES-permitted outfall that discharged from the SWMU 35-010(d) filter beds into Ten Site Canyon. A depth-recording gage station is located	Permittees – CoC from NMED HWB	Ten Site Canyon (Mortandad Canyon to	Do Not Delete.

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		<p>at the outfall and measured the effluent level above a small v-shaped weir discharge point. A rock-dissipater apron is present at the discharge point. Compiled flow records of the outfall show that the average flow rate was approximately 45,000 gal./d, exceeding the planned capacity of 12,000 gal./d. AOC 35-010(e) is a component of the former TA-35 WWTP that was used for the biological treatment of liquid waste and that received sanitary and industrial wastewater from TA-35, TA-48, TA-50, and TA-55 from 1975 to 1992, when all discharges from the filters beds ceased.</p> <p>Consent Order investigations for AOC 35-010(e) are complete. The Site meets recreational risk levels. A request for a CoC for AOC 35-010(e) was submitted to NMED in February 2011. NMED granted the Site a CoC with controls on October 14, 2015.</p>	and meets long term stewardship criteria	headwaters): adjusted gross alpha, PCBs.	This may be a PCB site. Gross alpha exceedances – this site discharges to adjusted gross alpha impaired waters.
T-SMA-7	04-003(b)	<p>SWMU 04-003(b) is the former drainline and outfall from a former laboratory control building (04-3), located at former TA-04. The outfall discharged about 20 ft north of building 04-3 into Mortandad Canyon. No radioactivity was detected in a 1953 survey, and the building was demolished and partially removed in 1956. The concrete storm drain, electrical conduit, wood and other surface debris, and the drainpipe were removed during the 1985 LASCPC cleanup effort. During the LASCPC cleanup, a portable radiation monitor was used, and no radioactive contamination was detected. In a 1988 survey, gamma radiation was detected at nearly twice the background level.</p> <p>Consent Order investigations for SWMU 04-003(b) are complete; the Site meets residential and recreational risk levels. A request for a CoC for SWMU 04-003(b) was submitted to NMED in August 2011. NMED granted the Site a COC without controls on May 18, 2015.</p>	Permittees – CoC from NMED HWB and meets long term stewardship criteria	Ten Site Canyon (Mortandad Canyon to headwaters): adjusted gross alpha, PCBs	Do Not Delete. Site should stay on the permit and be re-screened using SSD process. This is a gross alpha site discharging upstream of adjusted gross alpha impaired waters.
2M-SMA-3	07-001(a) 07-001(b) 07-001(d)	<p>SWMU 07-001(a) is an inactive firing pit located near the east end of TA-06. The Site consists of a circular depression surrounded by an annular berm about 4 ft high and approximately 30 ft in diameter. The firing pit was used in the 1950s to destroy scrap detonators and explosives. Materials to be destroyed were mixed with Composition B scraps or flaked TNT and the mixture was detonated. A 1959 memorandum states this method was very effective for destroying detonators, with no intact detonators thrown out of a pit and no undestroyed detonators found during a site survey, although pellets of unexploded PBX were found in post-firing debris. Small amounts of lead or mercury compounds may have been present in the blasting caps used to set off the HE used to destroy the detonators. This method of destroying detonators was discontinued at this Site in 1959. The original IP Site narrative stated that beryllium and DU may have been released at this Site. A thorough review of Site records did not identify the use of either beryllium or DU. Consent Order investigations have not been performed at SWMU 07-001(a), and no decision-level data are available for this Site. An RFI was conducted at the Site in 1994. The RFI data</p>	Permittees – Confirmation samples from	Two Mile Canyon (Pajarito to headwaters): adjusted gross alpha, PCBs, total recoverable aluminum, dissolved copper	Do Not Delete. This is an aluminum site discharging to aluminum impaired waters.

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		<p>are screening level only. SWMU 07-001(a) will be investigated under the Consent Order as part of the Twomile Canyon Aggregate Area investigation.</p> <p>SWMU 07-001(b) is an inactive firing pit located near the east end of TA-06. The Site consists of a circular depression surrounded by an annular berm about 4 ft high and approximately 30 ft in diameter. The firing pit was used in the 1950s to destroy scrap detonators and explosives. Materials to be destroyed were mixed with Composition B scraps or flaked TNT and the mixture was detonated. A 1959 memorandum states this method was very effective in destroying detonators, with no intact detonators thrown out of a pit and no undestroyed detonators found during a site survey, although pellets of unexploded PBX were found. This method of destroying detonators was discontinued at this Site in 1959. Consent Order investigations have not been performed at SWMU 07-001(b), and no decision-level data are available for this Site. An RFI was conducted at the Site in 1994. The RFI data are screening level only. SWMU 07-001(b) will be investigated under the Consent Order as part of the Twomile Canyon Aggregate Area investigation.</p> <p>(SWMU) 07-001(d) is an inactive firing site located near the eastern boundary of Technical Area (TA)-06. SWMU 07-001(d) was not included in the 1990 SWMU Report. The Operable Unit (OU) 1111 Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) work plan describes SWMU 07-001(d) as an inactive firing site located near the eastern boundary of TA-06 (formerly TA-07). The site is an approximately 20-ft-diameter by 3-ft-deep crater. Detonator parts have been found near the crater. Little is known about the operating history of this site, but it is believed to be the location of a one-time “celebratory shot” fired in 1945 after the Japanese surrender at the end of World War II.</p>			
PJ-SMA-4.05	09-004(g)	<p>SWMU 09-004(g) consists of a decommissioned sump (structure 09-190) and associated drainline located at TA-09 on the east side of building 09-50 (a shipping and receiving building) (AEC 1950, 601967). The sump, installed between 1950 and 1952, is made of reinforced concrete and formerly received industrial waste from building 09-50 (LANL 2011, 111794). Activities in the building involved shipping, receiving, short-term storage of HE, and small-scale laser experiments (LANL 1993, 020949). At one time, a press and plastic fabricating machinery were located in the building, but there was no heavy solvent usage (Harris 1993, 014952). Since 1993, building 09-50 has been used for storage only (LANL 2011, 111794). The sump collected settling HE particles that were not filtered out by the waste system for the building and discharged effluent to a former NPDES-permitted outfall (EPA 04A155), which is part of SWMU 09-005(g), a septic system that formerly received sanitary wastewater from building 09-50 (LANL 1990, 007511). Potential contaminants associated with TA-09 HE sumps include HE, acids, chemicals and solvents (LANL 1990, 007511). Periodically, the sump was inspected, debris was removed using specially equipped trucks, and the sump was cleaned (LANL 1993, 020949). In</p>	EPA – administrative changes from the 2010 permit to replace 09-004(g) with 09-005(g) on permit	<ol style="list-style-type: none"> 1. Pajarito Canyon (Arroyo de La Delfe to Starmers Gulch): fully supporting, 2. Pajarito Canyon (upper LANL boundary to headwaters): PCBs, total recoverable aluminum, adjusted gross alpha, total recoverable cyanide, total mercury 3. Pajarito Canyon (within LANL above Starmers Gulch): total recoverable aluminum, adjusted gross alpha 	Delete. Replace 09-004(g) with 09-005(g).

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		October 2006, the sump was removed (Johnson 2006, 110442).		4. Pajarito Canyon (Two Mile Canyon to Arroyo de La Delfe): PCBs, dissolved silver, dissolved copper, adjusted gross alpha	
PJ-SMA-5.1	22-016	SWMU 22-016 is an inactive septic system located approximately 120 ft south of building 22-0001. The septic system consists of a septic tank (structure 22-0042), drainlines and leach field (Engineering Drawing C-2013, LASL 1943, 601961). The septic tank was constructed of reinforced concrete dipped in creosote and measures approximately 9 ft long x 6 ft wide x 5 ft deep with a capacity of 1365 gal (LASL 1943, 601961; LANL 2011, 111794). The tank served building 22-0001 (an HE assembly building converted to an explosives fabrication facility in 1948) and former building 22-0004 (an office and fabrication building) from 1945 until 1948 when it was replaced by a new septic tank (structure 22-0051) [SWMU 22-010(b)] (LANL 2011, 111794). During the time that the SMWU 22-016 septic tank was in use, building 22-0001 was only used for fabrication of already assembled components and no hazardous wastes would have been generated (LANL 1993, 026068). The SWMU 22-016 septic tank was abandoned in place in 1952 (LANL 1990, 007512). Potential contaminants include HE and solvents (LANL 1993, 026068).	EPA – administrative changes from 2010 permit to replace 22-016 with 22-010(b) on Permit	1. Pajarito Canyon (Arroyo de La Delfe to Starmers Gulch): fully supporting, 2. Pajarito Canyon (upper LANL boundary to headwaters): PCBs, total recoverable aluminum, adjusted gross alpha, total recoverable cyanide, total mercury 3. Pajarito Canyon (within LANL above Starmers Gulch): total recoverable aluminum, adjusted gross alpha 4. Pajarito Canyon (Two Mile Canyon to Arroyo de La Delfe): PCBs, dissolved silver, dissolved copper, adjusted gross alpha	Delete. Replace 22-016 with 22-010(b).
PJ-SMA-13	18-002(a)	SWMU 18-002(a) consists of an inactive HE firing site at TA-18 in Pajarito Canyon south of the present location of building 18-0023. The firing site was used from 1944 to 1945 (LANL 1993, 015310). Materials used in shots at the site include uranium, thorium, HE, beryllium, cadmium, lead, and possibly barium (LANL 1990, 007512; LANL 1993, 015310). The site consisted of two structures: former structure 18-0003, a firing chamber 2 ft wide x 2 ft long x 2.2 ft deep constructed from 1-in.-thick steel, and former structure 18-0002, an aboveground armored bunker, commonly called a “battleship,” used to protect shot instrumentation (Drawing ENG-C 12050, LASL 1952, 602463; LANL 1993, 015310). The firing chamber was open on the top and set flush with the ground west of the bunker, which was designated as storage for HE in the historical TA-18 structure log. Structure 18-0003 was removed in 1945, and structure 18-0002 is no longer in use (LANL 2010, 109636).	Table 15 – LANL & EPA – no discharge	1. Pajarito Canyon (Arroyo de La Delfe to Starmers Gulch): fully supporting, 2. Pajarito Canyon (upper LANL boundary to headwaters): PCBs, total recoverable aluminum, adjusted gross alpha, total recoverable cyanide, total mercury 3. Pajarito Canyon (within LANL above Starmers Gulch): total	Delete. Site qualifies for no discharge.

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				recoverable aluminum, adjusted gross alpha 4. Pajarito Canyon (Two Mile Canyon to Arroyo de La Delfe): PCBs, dissolved silver, dissolved copper, adjusted gross alpha	
PJ-SMA-14	54-004	SWMU 54-004, (MDA H) is an inactive 0.3-acre landfill on Mesita del Buey in TA-54 consisting of nine inactive shafts used to dispose of LANL-generated classified waste from May 1960 through August 1986 (LANL 1992, 007669). Each shaft is 6 ft in diameter and 60 ft deep (LANL 2001, 070158). Wastes disposed of to the shafts included weapon components; classified documents and paper; aluminum, plastic, stainless steel, rubber, and graphite classified shapes; weapon mock-ups (models); depleted uranium scraps and classified shapes; film, prints, and slides; classified objects contaminated with high explosives; and graphite nuclear reactor fuel elements (LANL 1992, 007669). Other waste constituents include beryllium, lithium, phthalates/plastics, silver, tritium, and plutonium (LANL 2001, 070158). A total of approximately 382,000 lb of waste was disposed of at MDA H (LANL 2001, 070158). While active and between uses, each shaft was covered with a steel plate that could be padlocked to prevent the possible theft of classified waste (LANL 1992, 007669). The shafts were capped when waste came to within 6 ft of the surface. Shafts 1 through 8 are capped with 3 ft of crushed tuff followed by 3-ft-thick concrete caps; shaft 9 is capped solely by a 6-ft-thick layer of concrete (LANL 1992, 007669; LANL 2001, 070158).	Table 15 – LANL & EPA: delete, site qualifies for no discharge.	1. Pajarito Canyon (Arroyo de La Delfe to Starmers Gulch): fully supporting, 2. Pajarito Canyon (upper LANL boundary to headwaters): PCBs, total recoverable aluminum, adjusted gross alpha, total recoverable cyanide, total mercury 3. Pajarito Canyon (within LANL above Starmers Gulch): total recoverable aluminum, adjusted gross alpha 4. Pajarito Canyon (Two Mile Canyon to Arroyo de La Delfe): PCBs, dissolved silver, dissolved copper, adjusted gross alpha	Delete. Site qualifies for no discharge.
PJ-SMA-14.8	18-012(a)	SWMU 18-012(a) consists of a former outfall at TA-18 for a combined industrial drain and storm sewer drain for former building 18-116 (Kiva 3). Drainlines that discharged to this outfall were connected to building 18-116 roof drains, floor drains, and sinks. The outfall, found during 1992 field inspections using a dye-trace test, is located approximately 120 ft northeast of building 18-116 and approximately 150 ft from the stream channel in Pajarito Canyon. Building 18-116 was built in 1960 and used for uranium mockup tests for the Rover Program—a nuclear rocket propulsion program conducted from 1955 to 1972. The date this outfall became operational is not known, but it is likely the outfall has been operational from the time building 18-116 was completed in 1960. Building 18-116 underwent D&D in 2011 and 2012. SWMU 18-012(a) is included in the Consent Order as part of the Lower Pajarito	Permittees – confirmation samples from at least two stormwater samples are less than TALs.	1. Pajarito Canyon (Arroyo de La Delfe to Starmers Gulch): fully supporting, 2. Pajarito Canyon (upper LANL boundary to headwaters): PCBs, total recoverable aluminum, adjusted gross alpha, total recoverable cyanide, total mercury 3. Pajarito Canyon	Do Not Delete.

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		Canyon Aggregate Area. Consent Order investigations for this aggregate area have not yet begun. The investigation work plan for Lower Pajarito Canyon Aggregate Area was approved in December 2010. Decision-level data are not available for SWMU 18-012(a).		(within LANL above Starmers Gulch): total recoverable aluminum, adjusted gross alpha 4. Pajarito Canyon (Two Mile Canyon to Arroyo de La Delfe): PCBs, dissolved silver, dissolved copper, adjusted gross alpha	
PJ-SMA-16	27-002	<p>SWMU 27-002 is an inactive firing site in Pajarito Canyon used between 1944 and 1947. The Site consists of five former firing pits situated on both sides of Pajarito Road, approximately 0.9 mi southeast of TA-18. Firing Pit 1 is located in the grassy area approximately 100 ft south of the TA-36 fence.</p> <p>Firing Pits 2 and 3 are approximately 200 ft east of Firing Pit 1, between the fence and Pajarito Road. Firing Pit 4 has been impacted by the construction of Pajarito Road but is located on the north side of Pajarito Road. Firing Pit 5 is located on a small curve on the north side of Pajarito Road. The pits were used for explosives testing with materials such as beryllium, thorium, and uranium. A 1946 bullet sensitivity test at Firing Pit 1 caused a block of Composition B explosive to undergo a low-order explosion, scattering unexploded HE over a 250-yd radius. During the 1960s, all structures, concrete foundations, HE, and other debris were removed from former TA-27, the firing pits were backfilled, and the ground surface was leveled.</p> <p>SWMU 27-002 is included in the Consent Order as part of the Lower Pajarito Canyon Aggregate Area. Consent Order investigations for this aggregate area have not yet begun. The investigation work plan for Lower Pajarito Canyon Aggregate Area was approved in December 2010. Decision-level data are not available for SWMU 27-002.</p>	Permittees – Confirmation results from two stormwater samples are less than TALs.	<p>1. Pajarito Canyon (Arroyo de La Delfe to Starmers Gulch): fully supporting,</p> <p>2. Pajarito Canyon (upper LANL boundary to headwaters): PCBs, total recoverable aluminum, adjusted gross alpha, total recoverable cyanide, total mercury</p> <p>3. Pajarito Canyon (within LANL above Starmers Gulch): total recoverable aluminum, adjusted gross alpha</p> <p>4. Pajarito Canyon (Two Mile Canyon to Arroyo de La Delfe): PCBs, dissolved silver, dissolved copper, adjusted gross alpha</p>	Do Not Delete.
CDV-SMA-1.2	16-017(b)-99 16-029(k)	<p>SWMU 16-017(b)-99 is a former HE machining building (former structure 16-93) that was located at TA-16. Constructed in 1950, the wooden building measured 20 ft wide × 60 ft long × 11 ft high and was surrounded by an earthen berm that was packed against steel pilings. The building was originally used for HE machining and later was used as an electroplating facility. By 1970, the building was used only for storage. Building 16-93 was removed in 1996.</p> <p>SWMU 16-017(b)-99, along with numerous other SWMUs and AOCs, was investigated and remediated under the Consent Order as a single Site. Consent Order</p>	Permittees – CoC from NMED HWB and meets long term stewardship criteria	<p>1. Canon de Valle (LANL gage E256 to Burning Ground Spring): PCBs,</p> <p>2. Canon de Valle (below LANL gage E256): adjusted gross alpha</p>	Do Not Delete.

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		<p>investigations are complete for SWMU 16-017(b)-99. NMED granted the Site a COC without controls on August 1, 2016.</p> <p>SWMU 16-029(k) consists of two former HE sumps that served the former electroplating building 16-93 at TA-16. Constructed in 1950, the 5-ft-wide × 15-ft-long × 5-ft-deep concrete sumps were situated on the northeast and southeast corners of the building. Two VCP drainlines extended north from each sump and eventually merged into a single drainline that continued for approximately 500 ft to an outfall located north of the K-Site Road. In the 1960s, the sumps were filled with gravel. The building, sumps, and drainlines were removed during D&D operations in 1996.</p> <p>SWMU 16-029(k), along with numerous other SWMUs and AOCs, was investigated and remediated under the Consent Order as a single Site. Consent Order investigations are complete for SWMU 16-029(k). NMED granted the Site a COC without controls on August 1, 2016.</p>		3. Canon de Valle (upper LANL boundary to headwaters): PCBs, adjusted gross alpha	
CDV-SMA-1.3	16-017(a)-99 16-026(m)	<p>Site 16-017(a)-99 consists of a former HE machining building (structure 16-92) that was located at TA-16. Constructed in 1950, the wooden building measured 20 ft wide × 60 ft long × 11 ft high and was surrounded by an earthen berm that was packed against steel pilings. The building was originally used for HE machining and was later used to clean and refurbish HE-contaminated equipment. By 1970 the building was used entirely for storage. The building was removed in 1996. This Site was originally a component of SWMU 16-017, which consisted of a group of 24 structures within TA-16. During the 1999 Annual Unit Audit, SWMU 16-017 was split into 24 separate SWMUs to facilitate investigation. Structure 16-92 was given the individual SWMU identification of SWMU 16-017(a)-99 at that time.</p> <p>SWMUs 16-017(a)-99 and 16-026(m), along with numerous other SWMUs and AOCs, were investigated under the Consent Order as a single Site. The same surface sampling data set applies to both Sites.</p> <p>Consent Order investigations are complete for SWMU 16-017(a)-99. NMED granted the Site a COC without controls on August 1, 2016.</p> <p>SWMU 16-026(m) consists of two outfalls from two sumps [SWMU 16-029(l)], located near the 90s Line Pond area at TA-16, that served former HE machining building 16-92. The sumps were located on the east and west sides of building 16-92. The eastern sump discharged to a VCP drainline that extended north and west to its discharge point approximately 260 ft north of the building. The western sump discharged to a VCP that extended north and then west of the building where it discharged to an open drainage channel. Constructed in 1950, the building was used for machining HE until 1955. Subsequently, the building was used for cleaning and refurbishing HE-contaminated equipment. The sumps were filled with gravel during the mid-1960s, and by 1970 the building was devoted entirely to storage. The building, its sumps and drainlines were all removed in 1996. SWMUs 16-017(a)-99 and 16-026(m), along with numerous other SWMUs</p>	Permittees – CoC from NMED HWB and meets long term stewardship criteria	<p>1. Canon de Valle (LANL gage E256 to Burning Ground Spring): PCBs,</p> <p>2. Canon de Valle (below LANL gage E256): adjusted gross alpha</p> <p>3. Canon de Valle (upper LANL boundary to headwaters): PCBs, adjusted gross alpha</p>	Do Not Delete. This is a gross alpha site discharging to adjusted gross alpha impaired waters.

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		and AOCs, were investigated under the Consent Order as a single Site. The same surface sampling data set applies to both Sites. Consent Order investigations are complete for SWMU 16-026(m). NMED granted the Site a COC without controls on August 1, 2016.			
CDV-SMA-1.4	16-030(c) 16-026(l)	<p>SWMU 16-030(c) consists of three former outfalls from four roof drains at an x-ray film processing facility (former structure 16-222) at TA-16 (LANL 1995, 057225). The 1990 SWMU Report describes SWMU 16-030(c) as consisting of two outfalls originating from roof drains located on the northwest and northeast corners of building 16-222 (LANL 1990, 007512). Engineering drawings show that building 16-222 had four roof drains located at each roof corner that discharged to three outfalls (LASL 1959, 024165; Santa Fe Engineering 1994, 020972). The roof drain on the northeast corner of the building discharged via a 6-in. VCP to an outfall located approximately 65 ft southeast of building 16-222. The northwest corner roof drain discharged via a 6-in. VCP to an outfall located approximately 20 ft west of building 16-222. The southeast and southwest corner roof drains were connected to a 6-in. VCP that discharged to an outfall located approximately 15 ft southwest of building 16-222 (LANL 2002, 073664). Building 16-222 was constructed in 1953 and underwent D&D in 2003 (LANL 1995, 057225; Border Demolition and Environmental, Inc. 2003, 092460). NMED issued a CoC without controls for SWMU 16-030(c) in January 2008 (NMED 2008, 100116) because the Site had never been used to manage hazardous wastes or hazardous constituents (LANL 2002, 073664). SWMU 16-026(l) consists of two former outfalls that were located on the east side of former x-ray building 16- 220 in the northern portion of TA-16. Both outfalls received storm water discharges from separate roof drains. Engineering records state that neither the drainline nor the outfall could be located in the field. Building 16- 220 underwent D&D in 2003.</p> <p>Consent Order investigations have not yet begun for this Site; no decision-level data are available for SWMU 16-026(l). SWMU 16-026(l) will be sampled during the future Cañon de Valle Aggregate Area TA-16 investigation.</p>	16-030(c): EPA – Unknown 16-026(l): Permittees – Remediated and industrial materials are no longer exposed to stormwater	<ol style="list-style-type: none"> 1. Canon de Valle (LANL gage E256 to Burning Ground Spring): PCBs, 2. Canon de Valle (below LANL gage E256): adjusted gross alpha 3. Canon de Valle (upper LANL boundary to headwaters): PCBs, adjusted gross alpha 	<p>Delete 16-030(c) - see 401 certification comment 20.c. The other SWMUs in this SMA are appropriate to keep on the permit.</p> <p>Do Not Delete 16-026(l): This SWMU encompasses outfalls. With added POCs to the monitoring suite during the SIP further sampling may show issues that still need correction.</p>
CDV-SMA-2.41	16-018	<p>Deletion request in 2015. Deletion request based on the site not being included as a RCRA corrective action site; however, this is not the basis for stormwater permit coverage. Permittees need to include information regarding whether industrial materials are still exposed to stormwater.</p> <p>Site 16-018 is the former location of MDA P, north of the TA-16 burning ground near the south rim of Cañon de Valle. MDA P operated from 1950 to 1984 as a disposal site for debris that remained after HE and HE- contaminated material were burned at TA-16. Concrete and construction debris were deposited directly on the slopes leading down into the canyon. Other materials were burned at one of the nearby open-burn units, and the resulting debris or residue was pushed over the mesa rim into the canyon. The western area of MDA P primarily received</p>	EPA & LANL– No longer a RCRA corrective action unit, but a Hazardous Waste Management Unit and cannot be regulated under Permit.	<ol style="list-style-type: none"> 1. Canon de Valle (LANL gage E256 to Burning Ground Spring): PCBs, 2. Canon de Valle (below LANL gage E256): adjusted gross alpha 3. Canon de Valle (upper LANL boundary to headwaters): PCBs, adjusted gross alpha 	Do Not Delete. This site this is a PCB and gross alpha site discharging to PCB and adjusted gross alpha impaired receiving waters. Consent Order sampling has not been completed at this site.

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		construction debris from the demolition of World War II–era buildings; the eastern area received debris and residue from the open-burn units. MDA P underwent RCRA closure between 1999 and 2005. During closure, approximately 55,000 yd ³ of soil, rock, metal, and concrete debris was excavated from MDA P. Of this quantity, 21,506 yd ³ of soil was disposed of as hazardous waste. The remainder of this quantity consisted of industrial waste soils, concrete, and metal debris that was recycled or managed as industrial waste and rock that was decontaminated and then used as riprap within TA-16. Other excavated waste included 3947 lb of asbestos-containing material; 888 containers of unknown contents; 95 miscellaneous metal objects; 3240 lb of low-level waste; 5389 lb of mixed waste; and various smaller quantities of HE, HE-contaminated debris, and residuals from treating HE. Scrap metal and concrete were shipped to recycling facilities. Contaminated soils and industrial wastes were shipped to off-site solid waste landfills. Solid, nonhazardous wastes were disposed of at MDA J. The nature and extent have been defined for chemicals and radionuclides detected at SWMU 16- 018.			
CDV-SMA-2.42	16-010(b)	Deletion request in 2015. Site 16-010(b) is structure 16-387, a former flash pad located at the Technical Area 16 (TA-16) burning ground. The flash pad was enclosed within a 100- × 100-ft fenced area and consisted of a layer of sand several inches thick over a soil base. The pad was built in 1951 and was used to flash-burn solid and scrap high explosives (HE), HE-contaminated equipment and debris, and HE-contaminated combustible material. Sand and residues from flash-pad operations were disposed of at Material Disposal Area (MDA) P (currently covered in the Individual Permit at CDV-SMA-2.41). The flash pad operated as a hazardous waste treatment unit under RCRA Interim Status and underwent RCRA closure between 1999 and 2005. Closure activities included removing the flash pad and associated debris and removing soil and bedrock below and next to the former pad. The former flash pad and MDA P were closed and remediated together along with adjacent SWMUs known collectively as Consolidated Unit 16-016(c)-99; for cleanup and closure purposes, the Sites were referred to as MDA P Site. Confirmation samples were collected as part of the closure of MDA P Site and included Site16-010(b).	EPA & LANL – No longer a RCRA corrective action unit, but a Hazardous Waste Management Unit and cannot be regulated under Permit.	1. Canon de Valle (LANL gage E256 to Burning Ground Spring): PCBs, 2. Canon de Valle (below LANL gage E256): adjusted gross alpha 3. Canon de Valle (upper LANL boundary to headwaters): PCBs, adjusted gross alpha	Do Not Delete. This site is a PCB and gross alpha site discharging to PCB and adjusted gross alpha impaired receiving waters.
CDV-SMA-2.5	16-010(c) 16-010(d) 16-028(a)	Deletion request in 2015. Site 16-010(c) is a flash pad, structure 16-388, located at the TA-16 burning ground. The current flash pad consists of a 22- × 22-ft concrete pad set on a secondary containment area and surrounded on three sides by a concrete wall. Before treatment, the HE-contaminated wastes are placed on steel pallets or steel trays. Propane burners are used as heat sources to treat the wastes at the flash pad, which can be covered with a movable steel roof when the pad is not in use. The current burn tray consists of a stainless-steel kettle that is 30 in. in diameter and 24 in. high. Propane burners are used to treat HE-contaminated liquid wastes at the burn tray. The entire assembly is provided with secondary	16-010(c), 16-010(d): EPA & LANL– No longer RCRA corrective action units, but are Hazardous Waste Management Units and cannot be regulated under	1. Canon de Valle (LANL gage E256 to Burning Ground Spring): PCBs, 2. Canon de Valle (below LANL gage E256): adjusted gross alpha 3. Canon de Valle (upper LANL boundary	Do Not Delete.

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		containment. Site 16-010(d) is a former burn table that was converted to a burn tray, structure 16-399, located at the TA-16 burning ground. The 100-ft × 100-ft enclosed area consists of a concrete pad, a burn table that is approximately 2 ft above the ground surface, and a 16- × 4-ft metal tray situated on the table. Scrap HE was placed on the tray and burned. A metal-covered rain guard can be rolled back to expose the tray.	Permit. 16-028(a): Permittees – confirmation sample results from at least 2 stormwater samples are less than TALs	to headwaters): PCBs, adjusted gross alpha	
CDV-SMA-6.02	14-002(d) 14-002(e)	Consolidated Unit 14-002(c)-99 consists of SWMUs 14-002(c), 14-002(d), and 14-002(e). SWMU 14-002(d) is an x-unit chamber (structure 14-0014) located at TA-14 approximately 7 ft southwest of structure 14-0005 (Engineering Drawing ENG4 C-365, LASL 1949, 207439; LANL 2012, 210350). Constructed in 1944, the x-unit chamber was one of two voltage distribution systems installed at the SWMU 14-002(c) firing site. The x-unit chamber was constructed of reinforced concrete and measured approximately 3 ft wide x 4 ft long x 3 ft high (LANL 2012, 210350). The x-unit housed the firing voltage distribution system used for the remote detonation of small-scale explosives tests at structure 14-0005. The x-unit was used from 1944 to the mid-1950s when explosives operations ceased (LANL 2012, 210350). The 1994 RFI work plan for Operable Unit 1085 incorrectly identified SWMU 14-002(d) as a firing pad. Engineering drawings confirm it is an x-unit chamber (LASL 1949, 207439; LANL 2012, 210350). Consolidated Unit 14-002(c)-99 consists of SWMUs 14-002(c), 14-002(d), and 14-002(e). SWMU 14-002(e) is an x-unit chamber (structure 14-0015) located at TA-14 approximately 7 ft southeast of structure 14-0005 (Engineering Drawing ENG4 C-365, LASL 1949, 207439; LANL 2012, 210350). Constructed in 1944, the x-unit chamber was one of two voltage distribution systems installed at the SWMU 14-002(c) firing site. The x-unit chamber was constructed of reinforced concrete and measured approximately 3 ft wide x 4 ft long x 3 ft high (LANL 2012, 210350). The x-unit housed the firing voltage distribution system used for the remote detonation of small-scale explosives tests at structure 14-0005. The x-unit was used from 1944 to the mid-1950s when explosives operations ceased (LANL 2012, 210350). The 1994 RFI work plan for Operable Unit 1085 incorrectly identified SWMU 14-002(e) as a firing pad. Engineering drawings confirm it is an x-unit chamber (LASL 1949, 207439; LANL 2012, 210350).	EPA – administrative changes since 2010 permit to replace Sites 14-002(d) and 14-002(e) with 14-002(c) on Permit.	1. Canon de Valle (LANL gage E256 to Burning Ground Spring): PCBs, 2. Canon de Valle (below LANL gage E256): adjusted gross alpha 3. Canon de Valle (upper LANL boundary to headwaters): PCBs, adjusted gross alpha	Delete and replace with 14-002(c)
PT-SMA-1.7	15-006(a)	SWMU 15-006 (a) is inactive firing site, PHERMEX, and consists of a firing chamber (structure 15-0184) and related equipment. PHERMEX is located in the southeastern portion of TA-15, east of the DARHT Facility. This firing site was built in the early 1960s (LANL 1993, 020946). PHERMEX was used to examine the performance of nuclear weapon designs and major changes to stockpile weapons through a process called dynamic radiography. As a firing site, PHERMEX had the potential for depleted uranium (DU), beryllium, lead, mercury, thorium, and HE (LANL 1993, 020946). Past	EPA – administrative changes in 2010 permit are to keep SMA and replace 15-006(a) with 15-003 on IP.	Potrillo Canyon (above Water Canyon): adjusted gross alpha	Delete and replace with the correct SWMU 15-003.

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		environmental surveys at the PHERMEX firing site include an aerial radiological survey conducted in 1982 that identified elevated levels of uranium-238. A 1991 surface radiation survey identified elevated contact exposure rates believed to be associated with chunks of DU at the PHERMEX firing site (LANL 1993. 020946). Review of the Site descriptions and activities conducted within PT-SMA-1.7 has identified that Site 15-006(a) was incorrectly associated with industrial materials to be monitored at the SMA. Site 15-006(a) is structure 15- 184, which housed the equipment associated with the firing site. The firing site, 15-003, is the likely source of material released from the Site and the Site intended for regulation under the Individual Permit. Therefore, the current SMA location monitors runoff from the firing Site instead of runoff from structure 15-184 (LANL 2011, 208336).			
W-SMA-7	16-026(h2)	SWMU 16-026(h2) consists of four outfalls at TA-16 that served HE equipment assembly building 16-360. The western outfall received discharges from a steam pit drain. The southern outfall received condensate from three floor drains. The remaining two outfalls are located east of the building and discharge stormwater from roof drains (LANL 2011, 111602; LASL 1959, 024195). Building 16-360 was used to package HE components for storage or for shipment to other users (LANL 1993, 020948). Use of HE was low and discharge of hazardous materials from the building was effectively negligible (Panowski and Salgado 1971, 015271). In the 1990s, the steam pit drain and floor drains were recommended to be rerouted to the sanitary sewer system (Santa Fe Engineering Ltd. 1992, 020973).	EPA- administrative change since 2010 permit to replace 16-026(h2) with 16-029(e).	1. Water Canyon (Area-A Canyon to NM 501): fully supporting 2. Water Canyon (within LANL below Area-A Canyon): total recoverable aluminum, PCBs, adjusted gross alpha, total mercury	Delete and replace with 16-029(e). Investigational sampler added. This is a gross alpha site discharging to adjusted gross alpha impaired waters.
A-SMA-2.7	39-002(c)	AOC 39-002(c) is the location of a former outdoor SAA on an asphalt-paved area next to the southwest corner of the gas-gun support structure (39-56). Wastepaper; solvent-contaminated rags (ethanol, acetone, and trichloroethane); and vacuum grease were stored at this SAA. It is not known if this area was used for storage before it was placed in service as an SAA. This SAA was removed from service in February 1994. The Consent Order investigation of AOC 39-002(c) is complete. The approved Investigation Report for North Ancho Canyon Aggregate Area, Revision 1, concluded the nature and extent for all detected inorganic and organic contaminants are defined at AOC 39-002(c); no radiological COPCs were detected at the Site. The Site meets residential risk levels; therefore, no further investigation or corrective action is required. NMED issued a CoC without controls for AOC 39-002(c) in April 2010.	Permittees – CoC from NMED HWB and meets long term stewardship criteria.	North Fork Ancho Canyon (Ancho Canyon to headwaters: adjusted gross alpha, PCBs	Do Not Delete. This is a gross alpha site discharging to adjusted gross alpha impaired waters.
A-SMA-6	33-004(k)	SWMU 33-004(k) consists of a suspected outfall from building 33-87 located at East Site at TA-33. Building 33-87 was constructed in 1955 to support firing site experiments at East Site. The firing tests that structure 33-87 supported were conducted until the early 1970s. The outfall reportedly received discharge from a toilet, sink, floor drains, and an electrical water cooler within the building. Structure 33-87 was used to house electronic equipment, and there is no recorded use of radioactive materials in this building. The RFI work plan indicated that	Permittees – significant industrial materials were not used nor remediated such that stormwater is not impacted	Ancho Canyon (Rio Grande to North Fork Ancho): PCBs, total mercury	Do Not Delete. This is a gross alpha site and may be a PCB site discharging to adjusted gross alpha and PCB impaired waters.

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SMA	Site Number	Site Description	Deletion Proposed By/Reason:	Impairments	Settlement Decision: Delete/Do Not Delete
		photoprocessing may have occurred. Engineering drawing C-3304 shows a cast-iron drainpipe exiting the south wall of the building and extending approximately 125 ft southeast of the building where it terminates at the outfall. The engineering drawing describes the drainline as consisting of 54 ft of 8-in.-diameter cast-iron pipe and 71 ft of 8-in.-diameter VCP. Attempts to locate the drainline and outfall in 1994 and 1995 using geophysics and test trenches were unsuccessful. An inspection of the building performed in 1996 revealed that no floor drains existed in the building. The sink and toilet in the building discharge to septic tank 33-96 [SWMU 33-004(c)], located north of the building. Therefore, the drainline and outfall likely never existed. SWMU 33-004(k) is included in the Consent Order as part of the South Ancho Canyon Aggregate Area. Consent Order investigations for this aggregate area have not yet begun. The proposed investigation for this Site is presented in the South Ancho Canyon Aggregate Area investigation work plan, submitted to NMED in August 2015. No decision-level data are available for SWMU 33-004(k).			
CHQ-SMA-6	33-004(j)	<p>SWMU 33-004(j) is an outfall at the end of a 4-in. steel pipe used to drain storm water from the entrance pad to building 33-26. Building 33-26 is the x-unit vault for the South Site firing pad at TA-35 and formerly housed electronics used to control experiments conducted on the firing pad. These experiments were conducted from 1950 to 1956, and the vault is now empty. Structure 33-26 was abandoned in 1956 along with the drainline and outfall.</p> <p>The vault was cut into the tuff, and the entrance pad to the vault is located below grade. The drainline runs from the entrance pad, which is on the south side of building 33-26, approximately 200 ft south to the outfall. The outfall is located in a small arroyo that drains south to Chaquehui Canyon. A culvert at the upper end of this arroyo, upstream of the outfall, also may have received storm runoff from the vault entrance pad. No hazardous materials are known to have been used in building 33-26, but the entrance pad may have been contaminated with debris from the SWMU 33 006(a) firing pad, located above the vault.</p> <p>SWMU 33-004(j) is included in the Consent Order as part of the Chaquehui Canyon Aggregate Area. Consent Order investigations for this aggregate area were conducted in the fall of 2019 as described in the investigation work plan for Chaquehui Canyon Aggregate Area that was approved in March 2011. Decision-level data from this site characterization work will be presented in the Chaquehui Canyon Aggregate Area investigation report.</p>	Permittees – Significant industrial materials were not used nor remediated such that storm water is not impacted	Not assessed.	Do Not Delete.